

Hedonic-Utilitarian Focused Mobile Application Engagement: A Moderated Moderation of Brand Image

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Abstract

This study aims to investigate the online customer experience and postpurchase behavior in the mobile application context. This study is experimental with a quantitative approach. Two hypothetical mobile apps were developed; hedonic motive and instrumental motive. Data was collected by surveying 420 online shoppers and, analyzed by employing SEM using Amos. Results suggest that a mobile app that is hedonic motive (Richer media experience) enhances the customer experience and customer engagement behavior respectively. Next, the need for touch provides a boundary condition between the influence of customer experience and customer engagement behavior. Lastly, brand image provided the moderated moderation between customer experience and repurchase intention. These findings have implications for the retailer that they can enhance the customer experience through creating an effective customer experience using hedonic elements of the app. Further, retailers using a strong brand image can mitigate the need for touch in the online shopping context.

Keywords: Mobile app, Hedonic motive, Instrumental motive, Engagement behavior

The increased availability of internet-enabled smart phones and mobile devices has changed the buying patterns of millions of people around the world (Kasilingam & Krishna, 2022). It is expected that spending on mobile apps will reach 160 billion US dollars globally soon (Chopdar et al., 2022). However, it is argued that mobile users keep apps of large retailers such as Amazon (Molinillo-Sebastian et al., 2020). This behavior is concerning for retailers because it prevents them from realizing the app's full potential as a sales and engagement channel that can help them deepen consumer relationships. Since, the essential reason for a company's existence is its customers (Chander & Raza, 2015) so, it is imperative to understand what influences purchasers to use the mobile app (Kumar et al., 2018).

Customer engagement is linked with high profits for the firm (Hepola et al., 2020). It makes the customer be less price-sensitive and resist switching (Islam et al., 2019). It is confirmed that mobile app has a great potential to foster customer engagement due to their rich shopping experience. This experience can be either experiential or informational (van Heerde et al., 2019). Literature asserts that users look for hedonic and instrumental motives from the mobile app (Tafesse, 2021). Further, hedonic and utilitarian motive influences consumer behavior when using the mobile application (McLean et al., 2018). So, it is important to understand whether users interact with the mobile application for information purposes or enjoyment purposes (Eigenraam et al., 2021).

The growth in mobile applications has resulted in stiff competition among retailers. They have to work hard for impact and visibility (Eigenraam, Eelen, & Verlegh, 2021). Further, it is difficult to motivate users to stay on the app page (Lee & Kim, 2019). Despite the importance, most of the past studies have focused on the adoption of interface design (Bhandari et al., 2017), customer impulsiveness (Chopdar, Paul, Korfiatis, & Lytras, 2022), app adoption (Kumar, Purani, & Viswanathan, 2018) and app atmospherics (Lee & Kim, 2019). Research efforts are not enough for what motivates purchasers to use the app for information or enjoyment. Further, Studies on customer engagement with mobile apps are limited (Ho & Chung, 2020).

This research will be significant for online shopping retailers. It will be helpful for the retailers in the clothing industry to design an app that enhances the experiences and purchase intentions of the users. Further, through a strong brand image, they may mitigate the need for

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touch while purchasing online. This study is specifically conducted in Pakistan. Since there is a rising trend in technology and people are using mobile phones largely (Hanif et al., 2021).

This paper aims to answer the question; should all firms engage customers online in a way that entertains them in addition to informing them? This study presents the concept that in (consistency) between design elements (hedonic motive and Instrumental motive) influences online customer experience and postpurchase behavior in a mobile application. Based on the discussion above this study has four aims;

- To study the influence of hedonic-informative motive mobile app
- To study the influence of online customer experience on customer engagement behavior
- To study the boundary condition for the need for touch
- To study the brand image as moderated moderation in a way that compensates for the need for touch.

Therefore, the present study adds the understanding of the gaps available in the literature on customer experience generated through the mobile app design and outcome behavior. Further, it also adds to the existing literature by studying moderated moderation brand image in a way that affects the need for touch in the intangible environment of online shopping.

Literature Review and Hypothesis Development

App Design Elements and Customer Experience

Mobile app design plays a vital role in generating quality perception. It enhances customer experience and leads to customer engagement (Bhandari, Neben, Chang, & Chua, 2017). Studies are limited to features of the mobile app (Kumar, Purani, & Viswanathan, 2018). Past studies focused on design elements from the social and information perspective (Bleier et al., 2019), atmospherics (Lee & Kim, 2019), and interface design (Bhandari, Neben, Chang, & Chua, 2017). Further, Akdim et al. (2022) have studied hedonic and utilitarian types of social apps to check usage intention. Hedonic motive is related to when the user interacts with the app for getting the experience purpose and the utilitarian purpose user is getting with the app for the information purpose (McLean, Al-Nabhani, & Wilson, 2018). Further, Rehman and Mian (2021) also found a positive influence of hedonic and utilitarian values on buying behavior. Adding in their work, this study aims to examine whether buyers interact with the app for hedonic purposes or they interact for utilitarian purposes and influence experience and engagement.

H1a: Hedonic motive design of the mobile app has a significant influence on online customer experience and customer engagement behavior

H1b: Utilitarian motive design of the mobile app has a significant influence on online customer experience and customer engagement behavior

Online Customer Experience

Online customer experience is a psychological state of subjective response toward the retail website (Bleier, Harmeling, & Palmatier, 2019). Mobile app retailers allocate a reasonable amount of budget for enhancing the experience (McLean, Al-Nabhani, & Wilson, 2018). So, it is important to spend this budget appropriately. Customer experience is a multi-dimensional construct and is linked with behavioral aspects such as purchase and word of mouth (Izogo & Jayawardhena, 2018). The literature has confirmed dimensions of customer experience comprise cognitive, affective, sensory, and social (Bleier, Harmeling, & Palmatier, 2019). Research efforts on these dimensions holistically are not enough (Bhandari, Neben, Chang, & Chua, 2017; Bleier, Harmeling, & Palmatier, 2019; Izogo & Jayawardhena, 2018). This study aims to investigate the influence of cognitive, affective, social, and sensory dimensions of customer experience on customer engagement behavior.

Website informativeness is a cognitive attribute that suggests that information richness such as detailed product information, delivery, and pictures of the product increases purchase decisions (Wu et al., 2019). The quality of information includes accuracy, timeliness, and utility which influences the attitude and purchase intention of the product (Montoya-Weiss et al., 2003). In addition, it facilitates online experience closer to real experience (Pandey & Chawla, 2016). The importance of two dimensions of web information is substantial. What information is provided and how is it displayed on the internet (Vijay et al., 2017). The studies available are in the context of website informativeness (Bleier, Harmeling, & Palmatier, 2019; Wu, Wang, & Yan, 2019). This needs to explore in the context of the mobile app page. So, this study aims to examine the influence of mobile app informativeness on customer engagement behavior

Website enjoyment is a low-task cue that is creative and includes elements of fun, excitement, and cool(Mathwick et al., 2001). Enjoyment is an affective component and literature asserts that cognitive and affective components enhance purchase intentions (Molinillo-Sebastian, Navarro-Garcaa, Anaya-Sanchez, & Japutra, 2020). The product presentation, color of the website, graphics, pictures, and videos make it enjoyable and influences the user to stay (Wu, Wang, & Yan, 2019). Further, enjoyment of the mobile app helps in enhancing the customer experience and motivates the user to stay on the app (Eigenraam, Eelen, & Verlegh, 2021). Studies on web enjoyment are limited to websites (Izogo & Jayawardhena, 2018; Mathwick, Malhotra, & Rigdon, 2001), and lacks in the mobile app context. Therefore, this study aims to examine the influence of mobile app enjoyment on customer engagement behavior.

Next, the online environment lacks human warmth due to the absence of human and social influence which compels online retailers to make it socially rich (Lu et al., 2016). Social presence is the perception of warmth, human contact, and social ability(Hess et al., 2009). Retailers can create a social presence through pictures, videos, texts, and voices (Cyr et al., 2018). The research efforts on social presence are limited in the website context (Bleier, Harmeling, & Palmatier, 2019; Hess, Fuller, & Campbell, 2009). This study aims to examine the influence of mobile app social presence on customer engagement behavior.

The online environment lacks sensory experience. Positive sensory experience increases purchase intention (Gentile et al., 2007). This sensory experience can be evoked using the right use of pictures and videos (Bleier, Harmeling, & Palmatier, 2019). The research efforts are limited to the website context (Bleier, Harmeling, & Palmatier, 2019; Jung, 2008). This study advances the literature to add to the body of knowledge for mobile apps. So, these dimensions; informativeness, enjoyment, sensory appeal, and social presence measure the customer experience in the mobile application environment and its influence on customer engagement behavior.

Customer Engagement Behavior

Customer engagement behavior can be termed as behavior manifestation towards the firm (Van Doorn et al., 2010). Customer engagement behavior includes many types of behavior which can be categorized into three types; resource sharing with the firm, resource sharing with others, and direct influence (Barari et al., 2021). Resource sharing with the firm includes behavior in which customers provide suggestions in the form of feedback or complaint (Jaakkola & Alexander, 2014). Second, when a customer writes or provides word of mouth can be regarded as resource sharing with the actors (Van Doorn et al., 2010). Lastly, direct influence on them and influencing others such as repurchase intention and referring (Kumar et al., 2010). Despite the importance, literature on customer engagement has focused on positive aspects such as repurchase intention and positive word of mouth. Studies are limited to negative aspects such as complaint behavior (Barari, Ross, Thaichon, & Surachartkumtonkun, 2021). This study aims to investigate customer engagement behavior comprised of m-repurchase intention, word of mouth, and customer complaint behavior.

Electronic word of mouth is the one major outcome of customer experience (Siqueira Jr et al., 2019). It is the positive or negative information communicated by the present, existing, or potential customers using the internet (Babic Rosario et al., 2016). It has been asserted that e-WOM can be a powerful source for making a purchase decision in the online context (Ha & Im, 2012). However, despite the importance, research efforts are focusing on e-wom in the context of websites (Siqueira Jr et al., 2020; Verma & Yadav, 2021)Swanson, 1987. This study advances the body of literature by studying it as a consequence of customer experience.

It is the chances that a purchaser buy from the same mobile seller in the future (Pihlstrom & Brush, 2008). Acquiring new customers is five times more costly for the company as compared with retaining existing ones. Customer retention is a big challenge for the retailer (Khalifa & Liu, 2007). Literature confirmed that research efforts are not enough for repurchase intention in the online context (Islam, Hollebeek, Rahman, Khan, & Rasool, 2019). It is linked with many benefits for the firm such as certain demand and higher sales for the firm (Jimenez & San-Martin, 2017). Research efforts are considerable on repurchase intention in the website context (Lim et al., 2019). This study advances the literature by examining repurchase intention from the mobile app.

Customer complaint behavior is the customer's dissatisfaction arising from the negative reaction to poor service (Lam & Tang, 2003). The rapid development of the internet caused complaints as a threat to the company (Dyussebayeva et al., 2020). Customer complaint behavior is categorized into two types; the first is complaining about the employees of the company and the

second is complaining to a third party (Mei et al., 2019). This study aims to examine the influence of customer experience on complaint behavior.

H2: Informativeness of a mobile app influences significantly customer engagement behavior outcomes

H3: Enjoyment of a mobile app influences significantly customer engagement behavior outcomes

H4: Social presence of a mobile app influences significantly customer engagement behavior outcomes

H5: Sensory appeal of a mobile app influences significantly customer engagement behavior outcomes

Moderating influence of NFT on the relationship between CEB and

It has been asserted that the online environment lacks the physical touch of the product and makes customers less engaged with the product (Silva et al., 2020). This phenomenon is known as the need for touch which is the buyer's wish to interact with the product directly (Peck & Childers, 2003). Literature asserts that aesthetic websites can compensate for this limitation and reduce the need for touch (Ha, 2019). In the past need for touch was used as a moderator on the emotional response (Overmars & Poels, 2015) and brand attitude and intention to buy (Pino et al., 2020). So, this study aims to examine the role of aesthetic mobile app pages reduces the need for touch.

H6: Need for touch provides a boundary condition between the influence of online customer experience and customer engagement behavior.

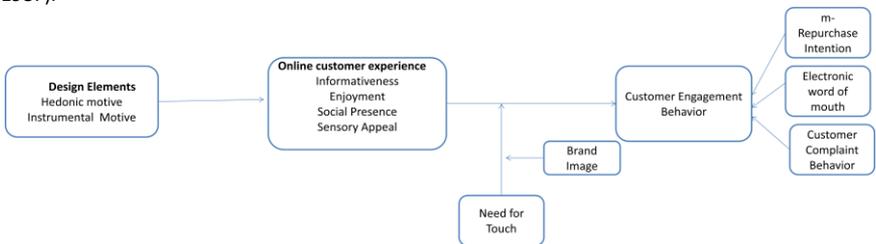
Brand Image as a moderator

The online environment is more intangible and purchasers cannot touch the product to evaluate it. They compensate for this intangibility with other quality indicators (Rodrigues et al., 2017). These compensations can be tangible such as hepatic imagery and intangible cues such as brand (Manzano et al., 2016). Further, Aghekyan-Simonian et al. (2012) asserted that brand image can compensate for intrinsic product features which are not available in the online context. This study aims to examine the role of brand image compensates need for touch.

H7: Brand image provides moderated moderation between the influence of customer experience and customer engagement behavior in a way that it positive brand image will strengthen the effect of the need for touch.

Theoretical Framework

This study uses information processing theory which suggests that the human brain works like a computer. It takes information in the form of stimuli, processes it, and presents output (Swanson, 1987).



Research Methodology

This is a quantitative study with an experimental research design. The experiment design of the study is between the subject. In which participants were exposed to different experiment stimuli and one participant is exposed to one condition (Sekaran & Bougie, 2016). So, in the present research one participant is shown a hedonic motive mobile app and other utilitarian motives mobile app. Participants explored the app for five minutes and completed a questionnaire.

This study employed a convenience sampling technique due to cost and time savings. The target population for the study is males and females having smart phones. The sample size 210 was selected based on G power for calculating the difference between two independent groups. Two real applications of hedonic and utilitarian motives were developed and presented to respondents. An online questionnaire was developed based on pre-established scales; for customer experience and its dimensions scale adapted from (Bleier, Harmeling, & Palmatier, 2019), customer engagement behavior and dimensions (Izogo & Jayawardhena, 2018), Need for touch (Peck & Childers, 2003) and brand image (Salinas & Pérez, 2009). Five-point Likert scale was used to

measure the responses. There were 420 responses we received. In the data cleaning process, we eliminated 20 responses for missing data. Out of 400 responses, 201 responses were from the experimental group and 199 from the control group.

Data Analysis and Results

The data was analyzed using SPSS and Amos. The data cleaning process, independent t-test, and moderation analysis were performed using SPSS. Then, Amos was used for testing the hypothesis using structural equation modeling. Structural equation modeling handles multiple equations at the time and was mostly used for social science research (Sheikh et al., 2021). The demographics of the study are presented in Table 1.

Table 1: Demographics

Hedonic App	Frequency	Utilitarian App	Frequency
Gender		Gender	
Male	103	Male	90
Female	98	Female	109
Education		Education	
Under-Graduate	70	Under-Graduate	65
Master	55	Master	55
M-phill	60	M-phill	54
PhD Scholars	16	PhD Scholars	25
Age		Age	
18-28	78	18-28	80
29-38	63	29-38	69
39-49	40	39-49	35
50 & above	20	50 & above	15

Reliability and Validity Analysis

In the first step, we measured the reliability of the scale using Cronbach’s alpha and values were above 0.7 within the satisfactory range (Malhotra & Dash, 2016). Then we measured the validity of the scale using the average variance extracted. All values of AVE are above 0.5 and accepted convergent validity is established. Next Discriminant validity was computed by taking the square root of the average variance extracted which must be higher than the correlation of inter dimension (Sekaran & Bougie, 2016). The output of reliability is presented in table 2, and convergent and discriminant validity in table 3.

Table 2: Reliability

Variable	Standard Deviation	Cronbach’s Alpha	Composite Reliability(CR)
Informativeness	4.233	0.861	0.871
Enjoyment	4.10	0.849	0.852
Social Presence	5.24	0.851	0.861
Sensory Appeal	4.28	0.831	0.846
m-repurchase Intention	4.92	0.876	0.870
EWOM	5.22	0.881	0.891
Customer Complain Behavior	4.21	0.871	0.881

Table: 3 Convergent and discriminant validity

Variable	Average Variance Extracted (AVE)	Informativeness	Enjoyment	Social Presence	Sensory Appeal	m-repurchase Intention	Customer Complain Behavior	e-WOM
Informativeness	0.651	0.815						

Enjoyment	0.657	0.706***	0.811* **					
Social Presence	0.617	0.709***	0.829* **	0.839 ***				
Sensory Appeal	0.682	0.711***	0.816* **	0.875 ***	0.941 ***			
m-Repurchase Intention	0.610	0.731***	0.771* **	0.827 ***	0.851 ***	0.873** *		
EWOM	0.651	0.659***	0.750* **	0.770 ***	0.795 ***	0.831** *	0.853* **	
Complaint Behavior	0.641	0.728***	0.733* **	0.754 ***	0.768 ***	0.787** *	0.839* **	0.863 ***

Independent Sample t-test

An independent t-test was conducted to compare the means of the design elements for both apps using SPSS. The t-test tells the group difference between two independent sample groups (Malhotra & Dash, 2016). The output is presented in the table. The output suggests that both groups are significantly different from each other. Further, hedonic apps have a more positive influence. The output is presented in table 4.

Table 4: t-test for measuring the difference between two apps

Type	N	Mean	Std. Deviation	Std. Error Mean	
Informativeness1	20				
	Hedonic app	1	5.83	1.46116	0.10306
	Instrumental motive app	19	2.31	1.32422	0.09387
Informativeness 2	20				
	Hedonic app	1	5.88	1.49087	0.10516
	Instrumental motive app	19	2.46	1.26241	0.08949
Informativeness 3	20				
	Hedonic app	1	5.86	1.63289	0.11517
	Instrumental motive app	19	2.47	1.35242	0.09587
Enjoyment1	20				
	Hedonic app	1	4.98	1.49492	0.10544
	Instrumental motive app	19	2.39	1.26096	0.08939
Enjoyment 2	20				
	Hedonic app	1	5.01	1.51821	0.10709
	Instrumental motive app	19	2.04	1.30092	0.09222
Enjoyment 3	20				
	Hedonic app	1	4.95	1.57048	0.11077
	Instrumental motive app	19	2.19	1.35572	0.0961
Social Presence1	20				
	Hedonic app	1	5.39	1.3561	0.09565
	Instrumental motive app	19	2.05	1.32263	0.09376
Social Presence 2	20				
	Hedonic app	1	5.74	1.36726	0.09644
	Instrumental motive app	19	2.41	1.44319	0.1023
Social Presence 3	20				
Hedonic app	1	5.93	1.34819	0.09509	

	Instrumental motive app	19				
		9	2.09	1.40772	0.09979	
		20				
Social Presence 4	Hedonic app	1	5.76	1.37091	0.0967	
	Instrumental motive app	19				
		9	2.79	1.36323	0.09664	
		20				
Social Presence 5	Hedonic app	1	5.74	1.54743	0.10915	
	Instrumental motive app	19				
		9	2.09	1.49873	0.10624	
		20				
Sensory Appeal 1	Hedonic app	1	5.34	1.36999	0.09663	
	Instrumental motive app	19				
		9	2.44	1.371	0.09719	
		20				
Sensory Appeal 2	Hedonic app	1	5.44	1.28568	0.09069	
	Instrumental motive app	19				
		9	2.14	1.49333	0.10586	
		20				
Sensory Appeal 3	Hedonic app	1	5.28	1.41069	0.0995	
	Instrumental motive app	19				
		9	2.41	1.43824	0.10195	
		20				
EWOM1	Hedonic app	1	5.65	1.40799	0.09931	
	Instrumental motive app	19				
		9	2.24	1.34765	0.09553	
		20				
EWOM 2	Hedonic app	1	5.57	1.49299	0.10531	
	Instrumental motive app	19				
		9	2.18	1.44947	0.10275	
		20				
EWOM 3	Hedonic app	1	5.93	1.38555	0.09773	
	Instrumental motive app	19				
		9	2.13	1.49461	0.10595	
		20				
EWOM 4	Hedonic app	1	5.78	1.36979	0.09662	
	Instrumental motive app	19				
		9	2.34	1.54359	0.10942	
		20				
EWOM 5	Hedonic app	1	5.78	1.57433	0.11104	
	Instrumental motive app	19				
		9	2.49	1.52235	0.10792	
		20				
EWOM6	Hedonic app	1	5.54	1.54661	0.10909	
	Instrumental motive app	19				
		9	2.05	1.31116	0.09295	
		20				
EWOM7	Hedonic app	1	5.58	1.65863	0.11699	
	Instrumental motive app	19				
		9	2.38	1.51913	0.10769	
		20				
EWOM8	Hedonic app	1	5.08	1.67414	0.11808	
	Instrumental motive app	19				
		9	2.84	1.49724	0.10614	
		20				
EWOM9	Hedonic app	1	5.28	1.55458	0.10965	
	Instrumental motive app	19				
		9	2.19	1.42398	0.10094	

			20				
EWOM10	Hedonic app Instrumental motive app		1	5.71	1.51502		0.10686
			19				
			9	2.31	1.37944		0.09779
			20				
EWOM11	Hedonic app Instrumental motive app		1	5.50	1.43916		0.10151
			19				
			9	2.40	1.32845		0.09417
			20				
m-Repurchase intention1	Hedonic app Instrumental motive app		1	5.52	1.3927		0.09823
			19				
			9	2.37	1.36317		0.09663
			20				
m-Repurchase intention2	Hedonic app Instrumental motive app		1	5.39	1.40521		0.09912
			19				
			9	2.13	1.2728		0.09023
			20				
m-Repurchase intention3	Hedonic app Instrumental motive app		1	5.33	1.57794		0.1113
			19				
			9	2.13	1.39842		0.09913
			20				
Customer complaint behavior1	Hedonic app Instrumental motive app		1	5.83	1.45193		0.10241
			19				
			9	2.05	1.37137		0.09721
			20				
Customer complaint behavior2	Hedonic app Instrumental motive app		1	5.32	1.5032		0.10603
			19				
			9	2.09	1.36468		0.09674
			20				
Customer complaint behavior3	Hedonic app Instrumental motive app		1	5.67	1.52638		0.10766
			19				
			9	2.05	1.39114		0.09862
			20				
Customer complaint behavior4	Hedonic app Instrumental motive app		1	5.77	1.5938		0.11242
			19				
			9	2.14	1.56633		0.11103

Hypothesis testing

Study 1: (Hedonic focus mobile app)

The results of study 1 show that there is a significant influence of informativeness social presence, sensory appeal with m-repurchase intention, electronic word of mouth, and customer complaint behavior. The result of enjoyment is not significant. The output for group 1 is presented in table 5, and for group 2 in table 6.

Study 2: (Instrumental focus mobile app)

The results of the control groups show that there is a significant and positive influence of informativeness, social presence, and sensory appeal with m-repurchase intention, electronic word of mouth, and customer complaint behavior. The influence is mobile app enjoyment is not significant.

Table 5: Hypothesis testing for Group 1/ Hedonic focus mobile app

Hypothesis		m-Repurchase Intention		Ewom		Customer Complaint Behavior	
		β	p	β	p	β	p
H2	Informativeness	0.340	***	0.311	***	0.47	***
H3	Enjoyment	0.036	.486	0.109	.006	-0.05	0.91
H4	Social Presence	0.541	***	0.32	***	0.20	0.03
H5	Sensory Appeal	0.321	0.034	0.39	***	0.545	***

Table 6: Hypothesis testing for Group 2/ Instrumental focus mobile app

Hypothesis		m-Repurchase Intention		Ewom		Customer complaint Behavior	
		β	p	β	p	β	p
H2	Informativeness	0.24	***	.220	***	0.29	***
H3	Enjoyment	1.12	0.68	.025	0.61	.033	0.56
H4	Social Presence	0.45	***	0.29	***	0.11	***
H5	Sensory Appeal	0.22	***	0.34	***	.570	***

Moderation Analysis

For measuring the moderating influence of auto-telic need for touch model 1, the influence of moderated moderation model 3 of Hayes process was used. The output is presented in table 7 for moderated moderation and table 88 for the need for touch as a boundary condition. The results are within the acceptable range thus need for touch provides a boundary condition between the influence of customer experience and customer engagement behavior. Further, the brand image provides moderated moderation in a way it reduces the need for touch.

Table 7: Moderated moderation influence of brand image for the need for touch

m-Repurchase Intention	β	P	LLCI	ULCI
Informativeness *Need for touch*Brand Image	0.71	0.03	-0.14	0.20
Enjoyment *Need for touch*Brand Image	0.10	0.00	-0.27	-0.29
Social Presence*Need for touch*Brand Image	0.11	0.009	-0.20	-0.30
Sensory Appeal*Need for touch*Brand Image	0.8	0.07	-0.15	0.008
EWOM				
Informativeness *Need for touch*Brand Image	0.13	0.01	-0.03	0.06
Enjoyment*Need for touch*Brand Image	0.003	0.01	-0.04	0.05
Sensory Appeal *Need for touch*Brand Image	0.02	0.00	-0.08	0.02
Social Presence *Need for touch*Brand Image	0.07	0.01	-0.05	-0.06
Customer Complaint Behavior				
Informativeness *Need for touch*Brand Image	0.04	0.04	-0.12	0.03
Enjoyment *Need for touch*Brand Image	0.04	0.02	-0.12	0.03
Social Presence *Need for touch*Brand Image	0.06	0.03	-0.16	0.03
Sensory Appeal *Need for touch*Brand Image	0.07	0.01	-0.15	0.017

Table 8: Need for touch as boundary condition between customer experience and customer engagement behavior

m-Repurchase Intention	β	p	LCL	UCL
Inf*NFT	0.20	0.000	0.21	0.31
Enj*NFT	0.26	0.002	0.26	0.36
SP * NFT	0.25	0.000	0.15	0.25
SA * NFT	0.27	0.000	0.17	0.26
e-wom				
Inf*NFT	0.11	0.001	0.14	0.28
Enj*NFT	0.32	0.001	0.15	0.25
SP * NFT	0.20	0.000	0.24	0.26
SA*NFT		0.000	0.23	0.31
Customer Complaint behavior				
Inf*NFT	0.25	0.001	0.27	0.35
Enj*NFT	0.31	0.000	0.21	0.31
SP * NFT	0.20	0.002	0.20	0.30
SA*NFT	0.17	0.000	0.28	0.37

Notes: Inf=informativeness, Enj= enjoyment, SP=social presence, SA=sensory appeal, NFT=need for touch

Discussion

This study has investigated the influence of hedonic-utilitarian focused design elements in enhancing customer experience which leads to engagement behavior. Further, moderated moderation influence of brand image on moderation need for touch was examined. The outcomes of the research suggest that hedonic mobile app has more influence on customer experience and customer engagement behavior.

Theoretical contribution

First, this study contributes to the body of knowledge by studying hedonic and utilitarian focus mobile applications separately. The focus of the past studies was on utilitarian focus (Kumar, Purani, & Viswanathan, 2018; McLean, Al-Nabhani, & Wilson, 2018; Molinillo-Sebastian, Navarro-Garcaa, Anaya-Sanchez, & Japutra, 2020). The results of the study suggest that hedonic motive mobile app have more influence on the creation of customer experience and engagement behavior. These findings are similar to past studies (Akdim, Casaló, & Flavián, 2022).

Second, literature added to the existing body of knowledge by studying customer experience as a multi-dimensional construct. Literature asserts that online customer experience is multidimensional and comprises social, affective, sensory, and cognitive dimensions. However, most of the past studies have focused on cognitive and affective dimensions (Izogo & Jayawardhena, 2018). Further, Bleier, Harmeling and Palmatier (2019) have studied cognitive, affective, social, and sensory dimensions of customer experience in the context of the website environment. The present study contributed to the literature by investigating the mobile application environment. The results are similar with the past studies conducted by (Bleier, Harmeling, & Palmatier, 2019; Molinillo-Sebastian, Navarro-Garcaa, Anaya-Sanchez, & Japutra, 2020).

Third, the study contributed to the body of knowledge by investigating the negative and positive aspects of customer engagement. Literature on customer engagement behavior has focused on positive dimensions such as; electronic word of mouth(Thakur, 2019), purchase (van Heerde, Dinner, & Neslin, 2019), firms advocacy (Roy et al., 2018), and referrals (Pansari & Kumar, 2017). This research contributed to the existing body of knowledge by adding customer complaint behavior.

Fourth, it has been confirmed that brand image enhances the quality perception and provides compensation in the online shopping context (Aghekyan-Simonian, Forsythe, Kwon, & Chattaraman, 2012). However, research efforts are not sufficient for the brand image as compensation for online intangibility (Silva, Rocha, Cicco, Galhanone, & Mattos, 2020). The present study contributed to the literature by studying brand image provides moderated moderation for the moderator's need for touch. These findings are similar to the findings of Overmars and Poels (2015) that the need for touch can be compensated by customer-based brand equity.

Managerial Contribution

The findings of the study provided implications for the managers of the clothing industry. They should design a hedonic app for enhancing the customer experience and in turn engagement. Further, it will help online retailers to design mobile apps with hedonic motives by incorporating a rich media experience rather than information specific will enhance customer experience. Furthermore, they should work on improving brand image to enhance the purchase decisions of the buyers in the mobile application context. Next, with a strong brand image, they can mitigate the lack of touch in the online environment. Retailers can work on improving their brand image.

Contextual Contribution

This study contributes contextually by developing two real mobile applications. In the past studies, mostly use existing apps were used(Kapoor & Vij, 2018; Kumar, Purani, & Viswanathan, 2018). Further, experiments carried out using real apps measures actual data (Yeh & Li, 2014).

Conclusion and Future Research Directions

This study investigated the role of hedonic motive and utilitarian-focused mobile apps to create a customer experience that leads to customer engagement behavior. We found that the hedonic motive mobile app has a stronger and more significant influence on customer experience and customer engagement behavior. Further, we examined the role of brand image as moderated moderation in mitigating the need for touch in the mobile application environment.

Despite theoretical, managerial, and contextual contributions this study is not free from limitations. Firstly, the size of the mobile screen should be included every mobile has a different screen size. Secondly, the study was cross-sectional, future studies might be conducted to study existing customers by conducting experiments over time. Third, this study is purely experimental and conducted in a lab setting. Future studies can be conducted in the field setting.

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