

EXPLORING THE SERIAL MEDIATION OF MOBILE APP ENGAGEMENT AND SELF BRAND CONNECTION IN THE RELATIONSHIP BETWEEN BRAND EXPERIENCE AND LOYALTY TOWARDS BRAND

ZIA-UR-REHMAN¹, MUHAMMAD RAZZAQ ATHAR², M. MOHSIN SHAHID³, MALIK MUHAMMAD FAISAL⁴, MAREUM SHEHZADI⁵

ABSTRACT

This study attempts to show the effect of brand experience which is taken as independent variable of system and mobile app engagement plays as a serial mediator role in the current study. Self-brand connection and loyalty towards brand are dependent variable. The purpose of this study is to evaluate and explore the serial mediation of mobile app engagement & self-brand connection in the relationship between brand experience and loyalty towards brand, to investigate impact of brand experience on mobile app engagement, self-brand connection and loyalty towards brand, to study direct impact of self-brand connection on loyalty towards brand and to examine impact of mobile app engagement on self-brand connection and loyalty towards brand. Consequently, smart PLS was used to occupy structural equation modeling to explore measurement model and hypothesis testing. Smart PLS 3.3 and SPSS are used in current study. A convenient sampling of 390 respondents from Rawalpindi and Islamabad is selected for the study. Findings of this study confirm that brand experience, loyalty towards brand and self-brand connection had a significant impact on online shopping experience through mobile app engagement. The results of this current study further indicate that all variables have a positive influence so through mobile app organizations should adopt fundamental strategies for customer loyalty and remain self-connected with them and give them positive pleasure experiences. The current study provides theoretical contribution with the view of task technology fit theory and self-determination theory. In addition, framework can be used for future analysts to get better understanding of brand experiences, loyalty towards brand and self-brand connection.

Keywords: Brand Experience, Mobile App Engagement, Self-Brand Connection, Customer loyalty towards Brand **JEL Codes:** M15, M30, M31, M37

I. INTRODUCTION

Today marketplace is heavily influenced by multiple technologies which has changes consumer buying behaviors patterns and intentions. They won't rely merely on market generated information regarding products & services. Instead, they visit sites and check customer testimonial services to get product that is beneficial to them. With the passage of time internet technology is changing day by day, our life style is change constantly. The number of internet users is increasing vastly, E-commerce offers an opportunity in web renounced internet marketing and worldwide selling. How do shoppers experience a brand? How is brand experience estimated? Brands experience influence purchaser conduct? Numerous valuable develops and estimations have been grown as of late in the marking writing, including brand character, brand local area, brand trust, brand connection, and brand love (Delgado-Ballester and Munuera-Alemán 2001), Carroll and Ahuvia (2006)and (Seligman, Steen et al. 2005). Notwithstanding, a conceptualization and scale for estimating brand encounters has not yet been created. Moreover, research has considered settings in which explicit item and administration encounters emerge(Parasuraman and Zinkhan 2002). Be that as it may, research has generally overlooked the specific nature and dimensional design of brand encounters. Brand experience has pulled in a ton of consideration in advertising practice. Promoting experts have come to understand that seeing how shoppers experience brands is basic for creating advertising methodologies

¹Assistant Professor, University Institute of Management Sciences, PMAS-Arid Agriculture University, Rawalpindi, Pakistan

²Assistant Professor, University Institute of Management Sciences, PMAS-Arid Agriculture University, Rawalpindi, Pakistan

³MS Scholar, University Institute of Management Sciences, PMAS-Arid Agriculture University, Rawalpindi, Pakistan

⁴Corresponding Author, Assistant Professor, Ghazi University, Dera Ghazi Khan, Pakistan

⁵MS Scholar, Üniversity Institute of Management Sciences, PMAS-Arid Agriculture University, Rawalpindi, Pakistan

for products and ventures. Many exchange works have showed up that present helpful ideas just as some impromptu experience estimations (Suls, Martin et al. 2002), Chattopadhyay and Laborie (2005).

Marketing is the incomparable objective of showcasing, and brand experience promoting is a receptive marking idea using more bright and huge instruments to spread the message of a brand. The "brand insight" is a promoting idea, a similar that identifies with the experience that the buyer has of an item or administration and not just with its picture. Living the brand is the consequence of this importance, however it depends on the individuals who build up this methodology in organizations that the aftereffect of this experience is positive or negative. There are a few ideas about what is the brand insight, one that we can specify is (Sahin, Zehir et al. 2011; Imran et al., 2022) who recommend that the brand experience can be resolved as the appreciation that individuals inspired by the brand have contact with it, even though it is by ad, individual relationship, or the degree of value proper to the specific treatment they get. The experience is conceived when clients utilize the brand, talk with different clients of the brand or ask data about it. del Carmen Giménez-Espert, Cáceres et al. (2016) conceptualizes the brand insight as "a relationship with the customer, not just of picture, yet additionally of living an encounter, knowing the assistance top to bottom" It reveals to us that the brand experience is connected to the inward correspondence of the individual in light of the fact that a similar the person sees, gets mindful, captures and makes changes in his way of life when living the experience, which if positive, would be an accomplishment of entering the market. (Brakus, Schmitt et al. 2009) builds up the brand insight as "the inward and individual reactions of the customers, just as the procedural reactions excited by improvements reliable with the brand that are essential for the plan and character of the brand".

The economic situation is changing quickly around the world (Arshad and Ali, 2016; Ashraf and Ali, 2018; Audi and Ali, 2017; Audi and Ali, 2017; Audi et al., 2021; Audi and Ali, 2016; Audi et al., 2021; Audi et al., 2021; Audi et al., 2021; Imran et al., 2021; Haider and Ali, 2015; Kaseem et al., 2019; Roussel et al., 2021; Senturk and Ali, 2021; Audi et al., 2022). There are quick good and bad times in the world economy including Pakistan (Ali and Audi, 2016; Ali and Senturk, 2019). Solomon (2009) is the view that there is a need to comprehend the conduct of the customers to address their particular requirements. Further, to fulfill them in each period of the economic cycle. The administration of branding has a profound established history. It impacts the development of premium in the rise of the idea of brand experience prompting explore in numerous sections (Lam and Shankar 2014). Marketers have keen interest in creating remarkable experience to the customers who visit the brand's website or mobile commerce app throughout the whole experience to retain the customers for long run. It takes effort to maintain the most efficient, reliable and high-quality brand's experience. Moreover, the association between self-brand's app connection and mobile app engagement is dependent on the brand experience which includes various factors i.e., nature of the industry, brand's recognition in the market, retail stores, customer segmentation. Therefore, it is imperative to study factors that affect the relationship between mobile app engagement and brand experience. Customer and promoting research have shown that experiences happen when buyers look for items, when they search for them and get services, and when they devour them Schmitt (1999).

Experiences likewise happen when customers devour and use items. Utilization encounters are multidimensional also, incorporate indulgent measurements, like emotions, dreams, what's, better time. A large part of the interpretive exploration on utilization encounters has broken down indulgent objectives that happen during and after the utilization of, for instance, galleries, stream boating, baseball, what's more, skydiving(Arnold and Gosling 2005). In synopsis, encounters emerge in an assortment of settings. Most encounters happen straightforwardly when purchasers shop, purchase, what's more, devour items. Encounters can likewise happen by implication—for instance, when purchasers are presented to publicizing and advertising correspondences, including Sites and M-commerce apps. Customer fulfilment and dedication are seen as one of the most essential and key components of business accomplishment. As a result of researching and evaluating the relationship between the brand and the customer, the determining important of many companies is to develop supportive and beneficial relationships with their clients in the light of the fact that such attractive and firm relationships have points of interest, for example, which impede the entry of competitors into the market, and reduce the effect on cost increases, A new study was conducted to examine the effects of online brand insight on customer engagement and loyalty.

II. LITERATURE REVIEW

Experience in the sense of smartphone apps, While the literature is still not process and finished, the same researchers based on the experience with marketed applications. In 2005, Rondeau researched smartphone apps labeling. The researcher found that the experience is essential to the effectiveness of the application and the brand, and urges advertisers to develop positive experience based on utilitarian principles, including successful aesthetics, including brand cues, to establish positive experience and improve distinction. Secondly, the experience of brands has been partly analyzed in the area of smart phone apps. The researchers clarified that "the degree to which

consumers have interaction with a brand through branded apps will affect their overall brand experience to the same extent" (Kim, et al., 2013). In addition, "the interacting interactions of customers with this type of brand contact will have an effect on their reaction to brand messages (Kim and Baek 2018) It also emphasized the idea that smartphone apps are "touch points" that advertisers can monitor and regulate in order to affect customer experience. Mobile apps are also relevant in brand building since customers perceive products by experiencing them. In addition, the authors have provided three major explanations why the familiarity of mobile apps is a key factor in their effectiveness: Finally, (Bellman, Potter et al. 2011) Studied two aspects of communication a smart phone device might have – utilitarian engagement and entertainment experience – dependent on experience from (Calder, Malthouse et al. 2009) The researchers have demonstrated that the success of the applications is due to the consistency of the knowledge and dedication they provide. Consequently, the researchers' enlightened utilitarian experience applications had a larger influence on the purchasing intention.

Many different terms are used to describe engagement, such as customer engagement, user engagement, customer brand involvement, customer engagement activity, or advertisement and event marketing. Yet, "consumer brand interaction" is seen as a "just relevant term" (Gambetti and Graffigna 2010) Described loyalty as the behavioral expression of the consumer towards a business or a brand beyond purchasing due to motivational drivers More specifically, it took a more professional and non-view of engagement and described it as 'a two-way customer-business information sharing mechanism aimed at engaging clients in company operations and promoting customer involvement in decision-making." On the other hand, (Holbrook and Hirschman 1982) explained it as: the level of motivational, brand-related and context-dependent state of mind of the individual consumer, defined by a particular level of cognitive, emotional and behavioral involvement in brand experiences." (Hollebeek 2011). Another essential factor to remember when seeking to describe engagement is its dimensionality.

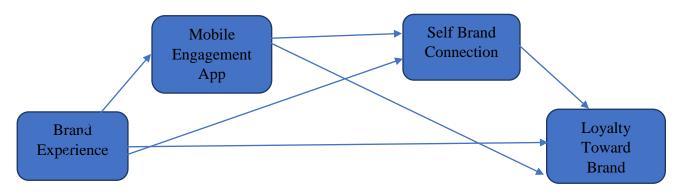
Commitment in an online and technological sense, when a smartphone application is perceived to be a modern technology, it is necessary to recognize commitment in an online and technological environment. Usually, online interaction is only possible if actors use up-to-date contact resources available by web 2.0 "and the engagement can be" on-line or offline communication tools, i.e., "platforms, chat rooms, web sites" According to the authors, online resources allow the consumer to communicate and participate in ways that would be difficult in an offline environment. Furthermore, Calder, Malthouse et al. (2009) Research of interaction in an online world, more specifically, a website. The researchers defined online engagement is described as "a selection of web experience" and illustrates 8 different forms of online experience. Both encounters create two distinct forms of online interaction. 'Private engagement,' which is equivalent to offline participation, where behavior becomes a simple routine - such as reading an article using an actual newspaper or a website - and 'Social-Interactive engagement,' which is more unique to an online world than online communication with a website. (Calder, Malthouse et al. 2009). From almost a few years, the smartphone app industry has exploded and expanded effectively, and is projected to grow by 270 per cent from \$70 billion in 2015 to \$189 billion in 2020. The mobile app has offered many incentives to customers and advertisers alike. Consumers have simple, fast and convenient access to numerous smartphone apps to conduct day-to-day routine tasks such as ordering goods, paying utility bills, playing video games, and contacting friends and family. Marketers also admitted that, in the modern age, smartphone applications offer a brand contact platform that helps customers to communicate regularly and improve brand loyalty. Mobile apps clearly help marketer to build long term relationship with customer, positive approach towards a brand and income growth.

Mobile app engagement refers to all interactive activities that a user has with a app. This could include all those activities on the app, the rate at which user engage. Mobile helps you to check ROI on app development and customer acquisition costs. Engagement is powerfully connected to brand understanding. As explained by (Kim and Baek 2018) "The series of motivational interactions that users have with branded applications leads to their total degree of loyalty to apps." The writers further add that "the dedication grows from the experience of the app" (Kim and Baek 2018). The first to research the influential qualities of interaction used in the development of branded smart phone apps. Focusing on mobile application interaction means focusing on communication in a more technical way, based on their analysis of the technology engagement model and other essential qualities such as vividness, inspiration or multiplatform, and attempting to determine which attributes were most used by branded mobile apps. Brand unwaveringness and client reliability is that client steadfastness for the most part identifies with the general spending force of buyers. It's about what you can offer them regarding normal costs and cash saving offers. Brand steadfastness then again, has next to no to do with costs or cash. Brand devotion has an inseparable tie to how shoppers see your image. This might be through special exercises, notoriety or past encounters with your organization. At the end of the day, client dependability identifies with those buyers that continue to return to your store. It's tied in with having lower costs than contenders or better limits for explicit items they're searching for.

Ur-Rehman, Z. Athar, M. R. Shahid, M. M., Faisal, M. M. and Shehzadi, M. (2022). Exploring the Serial Mediation of Mobile App Engagement and Self Brand Connection in the Relationship between Brand Experience and Loyalty towards Brand. *Bulletin of Business and Economics*, 11(2), 20-30. https://doi.org/10.5281/zenodo.6584745

Customers that are loyal to a brand remain customers, and they expect you to give preferential assistance and higher service than any other individual. This occurs paying no heed to valuation or other monetary reasons. In addition, this sort of customer is bound to test various products of a particular brand. These items may even be marginally more costly. Be that as it may, purchasers on the client dedication end of the range will absolutely search around if your costs go up or on the off chance that you quit sending a month-to-month newsletter.

III. THEORETICAL FRAMEWORK



IV. HYPOTHESIS TESTING

- H1: There is significant and direct relationship between brand experience and mobile app engagement.
- H2: There is significant and direct relationship between mobile app engagement and self-brand connection.
- H3: There is significant and direct relationship between self-brand connection and loyalty towards brand.
- H4: There is significant and direct relationship between brand experience and self-brand connection.
- H5: There is significant and direct relationship between mobile app engagement and loyalty towards brand.
- H6: There is significant and direct relationship between brand experience and loyalty towards brand.H7: Mobile app engagement mediate relationship between brand experience and self-brand connection
- H8: Self-brand connection mediate relationship between mobile app engagement and loyalty towards brand.
- H9: Mobile app engagement and self-brand connections serially mediate relationship between brand experience and loyalty towards brand.

V. RESEARCH METHODOLOGY V.I. POPULATION, SAMPLE AND DATA COLLECTION

Population can be definite as group of people, objects or events which researcher want to study or investigate. Data have been collected through online questionnaire and respondent have been approached by personal visit and data is individually gathered from twin cities are population for current study. The techniques or processes adopted for selection of a sample from a population is termed as sampling. Scholars have highlighted two major types of sampling techniques. According to Saunders and Bradbury (2006) for sampling the strategy which are used are probability sampling and non- probability sampling. In this method respondents are easily available and willingly provide more information more freely and correctly. Sampling methods are very important in order to make results of study generalizable. Sample size determination is an acute decision in research. Different researchers have miscellaneous opinions regarding appropriateness of sample size. According to Taherdoost (2016) the sample size is estimated to be 400-600 respondents to get accurate and authentic results from collected data. According to Hossain (2011) the admissible range of sample size is 30 with a maximum of 500. The sample size of this study is 390 respondents. The sample size was selected as per Morgan and Case (2013)'Rule of Thumb' stated that sample size depend on population if the population exceed 1000000 then the sample size will remain constant on 384.For the data collection of the current study, questionnaire was distributed among the respondents personally through online in twin cities (Rawalpindi and Islamabad). Several methods were used for the data analysis and techniques conducted in the current study. Data analysis was divided into two sections. In first section, preliminary data analysis was managed. Data was evaluated through SPSS software (Statistical Package for Social Sciences) for checking multiple statistical tests and smart PLS (Partial Least Square) were used to retrieve the relationship between structural equation modeling constructs.

IV.II. RESEARCH INSTRUMENT

Research instruments are tools that are engaged to define process of grouping and disseminate questionnaire in order to get effective and authentic response. Kumekpor (2002) The questionnaire was made with a aim of expressing opinions that how people feel or think about something and behavior what respondents will do and attributes-

determining respondents beliefs and behavior that they hold Saunders and Bradbury (2006). Questionnaire was the mechanism to collect data for the study. All the items were adopted from past research articles such as scale to measure mobile app engagement was adopted from Kim and Baek (2018) and self-brand connections was adopted from Kim and Baek (2018). loyalty towards brand has been adopted from McLean (2018) and brand experience has

V. RESULTS AND DISCUSSIONS

been adopted from Brakus, Schmitt et al. (2009)

This section aims to enlighten data analysis results and statistical analysis for the current study. Descriptive analysis results are widely explained involving socio demographics and features of sample results for the current study. In addition, structural equation modeling is used to examine the inferential statistics to test the hypothesis. Furthermore, stages of structural equation modeling are briefly explained which involve structural model, measurement model discussing about hypothesis testing and direct research questions consistently. For conducting data analysis, SPSS software and Smart PLS 3.3 software were used. The current study used structural equation modeling in smart PLS 3.0 to determine the calculation and structural model. The explanation why smart PLS is chosen is that the smart PLS 3.0 research is considered one of the structural equation modeling statistical processes that analyzes both the measurement model and the structural model at the same time. Hair et al., (2016). However, for the current research given the complexity of the model, the review is performed in two phases, in the first step the measurement model is evaluated each constructs indicator, then after the measurement model matrices were fixed the consistency of the measurement model was evaluated, this was achieved by checking of the construct convergent and discriminant validity.

V.I. MEASUREMENT MODEL

Table 1: Measurement Model (Outer Loading)

Construct	Indicators	Factor loading	AVE	Composite Reliability
Mobile-App engagement	MAE1	0.808		0.888
	MAE2	0.79		
	MAE3	0.785		
	MAE4	0.802		
	MAE5	0.733		
Brand experience	BE1	0.789	0.527	0.898
	BE2	0.73		
	BE3	0.8		
	BE4	0.773		
	BE6	0.705		
	BE7	0.709		
	BE9	0.643		
	BE12	0.637		
Loyalty toward brand	LTB1	0.735	0.684	0.915
	LTB2	0.866		
	LTB3	0.844		
	LTB4	0.844		
	LTB5	0.839		
Self-brand connection	SBC1	0.865	0.738	0.918
	SBC2	0.901		
	SBC3	0.863		
	SBC4	0.803		

The PLS algorithm was used for checking the measurement model in smart PLS 3.0 to verify the reliability of the construct, convergent validity, factor loading, average variance extracted and discriminant validity. Measurement model is used to ascertain reliability and validity of all constructs in proposed model. The reliability of survey can be suggested with the help of Cronbach's alpha and composite reliability

11(2), 20 30. https://doi.org/10.0201/201000.0501715

A number of similarities between the markers of the same principle constructs are expressed in convergent validity .Sami and Irfan (2020). Elements of convergent validity are factor loading average variance derived (AVE) and composite reliability (CR). Factor loading describe the representation of the contribution to the respective construct of the indicator. In addition, AVE is the sum of the square of uniform factor loading to show how much variance is explained by the latent construct in each object. Further down, AVE is the average percentage of variance clarified by the measurement products in a build. The standard value of AVE is 0.50 or more. The final AVE of the respective constructs is shown in table 4.4 after the elimination indicators with a low threshold load factor of less than 0.60. AVE was reported for 0.43 brand experience self-brand connection was reported. For construct with factor loading higher than 0.60.

Composite reliability was used composite reliability shows to a block that is considered equal and an internal consistency measure (Barroso, Carrión et al. 2010). The threshold value of the composite reliability is 0.70 or above (Governments). table 4.4 shows that composite reliability of the construct which is above than 0.70. the composite developed by Werts, Linn et al. (1974) fulfills the same test as Cronbach's alpha, the interpretation of both indexes is similar (Nunnally 1978) suggest 0.7 as a benchmark for modest reliability applicable in early stages of research and a more stick 0.8 value for basic research.

Further, this shows the composite reliability for brand experience 0.898 was reported, self-brand connection was reported 0.918, mobile app engagement was reported 0.888, loyalty toward brand was reported 0.915. values for final measurement model for the current study.

Table 2: Reliability analysis

S.no	Variables	Number of items	Cronbach's a
1	Mobile app engagement	5	0.843
2	Self-brand connection	4	0.90
3	Loyalty towards brand	5	0.875
4	Brand experience	12	0.90

This table interpret that Cronbach alpha of mobile app engagement is stated as 0.843, self- brand connection is stated as 0.90, loyalty towards brand is stated as 0.875 and brand experience is stated as 0.90. This shows that reliability of all constructs is acceptable. Discriminant validity is the degree to which three different values in identical constructs, when correlations between the constructs are above 0.855, the discriminant validity is violated. Cooper. Two standards for assessing discriminant validity are used in the present I.e. criterion of Fornell-larcker and cross-loading Hair Jr, Hult et al. (2016). The requirement to address discriminant validity for measurement model is Fornell-larcker criteria. The fornell-larcker criterion refers to each latent construction's square root of average variance extraction, This correlation with another latent variable in the model is greater than the latent inter construction correlation Hair Jr, Hult et al. (2016).

V.II. ASSESSMENT OF STRUCTURAL MODEL

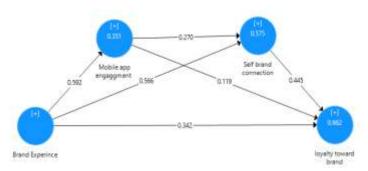
Accordign to Duarte and Raposo (2010) In SEM the structural model is the relefection of the relationship that is assumed, the second phase provide evidence supporting hypothesized relationship after evaluating the quality of the measurement model in the first phase. According to (Henseler, Ringle et al. 2009). Three parameters determine the hypothesised relationship between construct whichare, Determination coefficient (R2) for endogenous, Scale of impact (f2), Hypothesized realtionship path coeffcient.

Table 3: Coefficient of Determination (R2) of Endogenous Construct of Measurement Model and F2 values of each path

Constructs	R2	Adjusted R2	F2
Brand experience	••••	••••	0.548
Loyalty towards brand	0.662	0.659	
Self-brand connection	0.575	0.573	1.424
Mobile app engagement	0.351	0.349	0.584

After explaining the R2 and F2, next step is to test the proposed hypotheses for the current study hypothese testing explain te strength of realtionship as well as their significance to determine the significance and strength of realtionships among the altent construct PLS-SEM uses path coefficient. According to Götz, Liehr-Gobbers et al. (2010) the standard beta coefficient of OLS and these path coefficient can be interpreted in the same manner. In PLS-SEM to get path coefficients and T-value and P-value bootsstrapping technique is used to test hypothesis realtionship (Hwang, Sarstedt et al. 2020).bootstrapping technique is used to test hypothesized relationship. Hair, Ringle et al. (2011) defins bootstapping is a non parametric test that requies repeated random sampling with the

original sample replacement to get standard errors to test significance for each realtionship, there is no consenuses on the sum of resampling (Chin 2010) believes in doing 5000 re samples of boot strapping for instance, in order to find the significance of the route coefficient, the current research used 5000 resamples to perform the boot strapping process.



To evaluate the hypothesis proposed for any research analysis, the findings of the structural model are used. It is possible to assess the finding of the hypothesis on three parameters, firstly P-value which at any value less than 0.05 is important. Secondly T-value whose value must be greater than 1.966. In the **table** the value of path coefficient for Brand Experience -> Mobile app engagement 0.594 the value of T-stat is 15.25 > 1.96, p-value is 0.00 < 0.05. so H1 accepted. The value of path coefficient for Brand Experience -> Self brand connection 0.568, the value of T-stat is 11.696 > 1.96, p-value is 0.00 < 0.05 so H2 accepted. The value of path coefficient for Brand Experience -> loyalty toward brand 0.342 the value of t-stat is 6.689 > 1.96, p-value is 0.00 < 0.05 so H3 accepted. The value of path coefficient for Mobile app engagement -> Self brand connection 0.269 the value of t-test is 5.078 > 1.96, p-value is 0.00 < 0.05 so H4 accepted. The value of path coefficient for Mobile app engagement -> loyalty toward brand 0.118 the value of t-test 2.711 > 1.96, p-value is 0.00 < 0.05 so H5 accepted, the value of path coefficient Self-brand connection -> loyalty toward brand 0.444 the value of t-stat 8.563 > 1.96, p-value is 0.00 < 0.05 so H6 accepted.

VI. DISCUSSION AND IMPLICATIONS

The present study aims at empirically exploring the serial mediation of mobile app engagement and self-brand connection in the relationship between brand experience and loyalty towards brand. Nine hypotheses were proposed to test direct effects and indirect effects through serial mediation. For the current analysis, the first objective of research was to examine the relationship between the brand experience, mobile engagement, self-brand connection and loyalty toward brand. The research question was constructed based on objective 1, research hypothesis state that "brand experience has direct impact on mobile app engagement. Hypothesis H1 stats "direct relationship between brand experience and mobile app engagement." For the current analysis this relationship is significant the result of the current study are related to the past studies which claim that mobile app engagement has positive impact on brand experience (Kim and Baek 2018). Hypothesis H2 stats "direct relationship between Brand experience and self-brand connection". For the current analysis this relationship is significant. The result of the current study are related to the past studies which claim Brand experience has positive impact on self-brand connection Brakus, Schmitt et al. (2009).

H4 hypothesis stats "There is significant and direct relationship between mobile app engagement and self-brand connection" for the current study there is significant impact. The result of current study shows us that there is positive impact on self-brand connection and loyalty toward brand. Kim and Baek (2018)Escalas (2004). The current study also aims to investigate about impact ofself-brand connection on loyalty towards brand. To address this relationship research question 3 is based on research objective 3. The research hypothesis H3 hypothesis stats "There is significant and direct relationship between self-brand connection and loyalty towards brand" deliberately investigate that does self-brand connection have any impact on loyalty towards brand. As discussed above in current literature, self-brand connections have direct impact on loyalty towards brand. As a support of previous literature, Self-brand connections are supposed to build lasting positive relation loyalty to the brand (Escalas and Bettman 2003).

VI.I. THEORETICAL IMPLICATIONS

After this study we assume that the use of different brand experience to generate a lot of loyalty towards brand also create the self-connection of customer towards different brand. The two major contribution of this study or research brings an effort of involvement that shows how the first use of different variable to show that how the impact of loyalty towards brand and self-brand connection on the behavioral changes through the brand experience, the second impact which we developed through this study is that how the use of mobile app as a serial mediator to engage customers or consumer towards the brand experience. We use mobile app to engage customers towards brand and get our desired results of dependent variable like loyalty towards brand and self-brand connection. The results which developed through this study provided a stepping stone to understand the process of brand experience through various mobile app which ultimately generate loyalty of brand and self-brand connection.

VI.II. PRACTICAL IMPLICATIONS

The current study is expected to have major practical implications particularly for different brands and textile industry. Firstly, the present study has made a significant practical contribution in defining the underlying process of intention to purchase various brand product which gives a sense to make an experience for that brand. Brand loyalty is created with the meaningful Expectations and known that how to increase the number of customers through brand experience. Secondary this study helps the corporation in devising policies and Strategies for the application of mobile app in this context.

VI.III. LIMITATIONS AND FUTURE RESEARCH

There are some limitations which should be considered before the setup of results. Firstly, the current study uses mobile app as a mediator, in future there is possibility of uses of different other mediators to find more favorable result. Secondly lead you to pandemic of covid-19 we collect our all data through online survey whereas, in future there should be use of online and offline Data Collection method. We collect our all data from twin City. Further this study will collect its data from other cities of Pakistan. another part in which, we use the framework to show the impact of brand loyalty and brands are connection in ordering to develop the brand experience in the presence of mobile app, which will go to some other mediators or independent variables can also be applied for the betterment of results.

VII. CONCLUSION

Our study has shown the impact loyalty towards brand and self-brand connections towards brand experience through mobile app engagement in the period of covid-19. Consumers are very much willing to pay their intention towards various mobile app to engage themselves for experiencing first time brand through online, because in pandemic situation no one goes physically in the market to purchase product. The result of this study also shows, that how customer is attracting the mediating factor of mobile app engagement. The element of mobile app is much benefited for the organization to build their existing loyalty in the minds of their customer. When a customer experiences a brand through the use of mobile app and remains satisfy, it will notice that organization retain its loyalty towards the customer. Also, if customer wants to create a self-connection with a brand than he needs a brand experience, which a company is given to them in the crucial situation of covid-19. Our results of this study show all the positive relationship between the variables. So, it is very easy to identify that companies uses the role of mobile engagement very strongly to build the relationship between brand loyalty and self-brand connection with brand experience. The future identification for the researcher is to build a strong relation among the organization and consumer which ultimately enhance the brand experience with mobile app engagement.

REFERENCES

- Ali, A., & Audi, M. (2016). The Impact of Income Inequality, Environmental Degradation and Globalization on Life Expectancy in Pakistan: An Empirical Analysis. *International Journal of Economics and Empirical Research*, 4 (4), 182-193.
- Ali, A., & Şenturk, I. (2019). Justifying the Impact of Economic Deprivation, Maternal Status and Health infrastructure on Under-Five Child Mortality in Pakistan: An Empirical Analysis. *Bulletin of Business and Economics*, 8(3), 140-154.
- Ali. S, M. and T. Eslami (2011). Knowledge sharing in Sharif University of Technology: Social capital approach. *Journal of Public Administration*, 3(8), 1-18.
- Arshad, S., & Ali, A. (2016). Trade-off between Inflation, Interest and Unemployment Rate of Pakistan: Revisited. *Bulletin of Business and Economics (BBE)*, 5(4), 193-209.
- Ashraf, I., & Ali, A. (2018). Socio-Economic Well-Being and Women Status in Pakistan: An Empirical Analysis. *Bulletin of Business and Economics (BBE)*, 7(2), 46-58.

- Audi, M & Ali, A. (2017). Socio-Economic Status and Life Expectancy in Lebanon: An Empirical Analysis. *Archives of Business Research*, 5(11), 159-170
- Audi, M. & Ali, A. (2017). Environmental Degradation, Energy consumption, Population Density and Economic Development in Lebanon: A time series Analysis (1971-2014). *Journal of International Finance and Economics*, 17(1), 7-20.
- Audi, M. Sadiq, A. Ali, A. and Roussel, Y. (2021). Performance Evaluation of Islamic and Non-Islamic Equity and Bonds Indices: Evidence from Selected Emerging and Developed Countries. *Journal of Applied Economic Sciences*, 16(73), 251–269.
- Audi, M., & Ali, A. (2016). A Causality and Co-integration Analysis of Some Selected Socio-Economic Determinants of Fertility: Empirics from Tunisia. *Bulletin of Business and Economics (BBE)*, 5(1), 20-36.
- Audi, M., Ali, A., & Al-Masri, R. (2022). Determinants of Advancement in Information Communication Technologies and its Prospect under the role of Aggregate and Disaggregate Globalization. *Scientific Annals of Economics and Business*. https://doi.org/10.47743/saeb-2022-0009.
- Audi, M., Ali, A., & Roussel, Y. (2021). Aggregate and Disaggregate Natural Resources Agglomeration and Foreign Direct Investment in France. *International Journal of Economics and Financial Issues*, 11(1), 147-156.
- Audi, M., Ali, A., & Roussel, Y. (2021). Measuring the Tax Buoyancy: Empirics from South Asian Association for Regional Cooperation (SAARC). *Empirical Economics Letters*, 20(12).
- Audi, M., Ali, A., & Roussel, Y. (2021). The Advancement in Information and Communication Technologies (ICT) and Economic Development: A Panel Analysis. *International Journal of Innovation, Creativity and Change*, 15(4), 1013-1039.
- Babbie, E. R. (2010). The Practice of Social Research. Belmont, CA: Wadsworth Cengage, 2010; Muijs, Daniel. Doing quantitative research in education with SPSS.
- Barroso, C., (2010). Applying maximum likelihood and PLS on different sample sizes: studies on SERVQUAL model and employee behavior model. *Handbook of partial least squares*, Springer: 427-447.
- Bell, E., (2018). Business research methods, Oxford university press.
- Bellman, S., (2011). The effectiveness of branded mobile phone apps. *Journal of Interactive Marketing* 25(4), 191-200.
- Biedenbach, G. and A. Marell (2010). The impact of customer experience on brand equity in a business-to-business services setting. *Journal of Brand Management*, 17(6), 446-458.
- Brakus, J. J. (2009). Brand experience: what is it? How is it measured? Does it affect loyalty? *Journal of marketing*, 73(3), 52-68.
- Calder, B. J., (2009). An experimental study of the relationship between online engagement and advertising effectiveness. *Journal of Interactive Marketing*, 23(4), 321-331.
- Chattopadhyay, A. and J.-L. Laborie (2005). Managing brand experience: The market contact audit™. *Journal of Advertising Research*, 45(1), 9-16.
- Chen, W. and R. Hirschheim (2004). A paradigmatic and methodological examination of information systems research from 1991 to 2001. *Information systems journal*, 14(3), 197-235.
- Chin, W. W. (2010). How to write up and report PLS analyses. *Handbook of partial least squares*, Springer: 655-690
- Christensen, J. L. (2008). 11. An NSI in transition? Denmark. Small country innovation systems: 403.
- Churchill, G. A. and D. Iacobucci (2006). Marketing research: methodological foundations, Dryden Press New York.
- Cohen, J. (1992). A power primer. Psychological bulletin, 112(1), 155.
- Collis, J. and R. Hussey (2013). Business research: A practical guide for undergraduate and postgraduate students, Macmillan International Higher Education.
- Creswell, J. W. (2009). Mapping the field of mixed methods research, SAGE publications Sage CA: Los Angeles, CA.
- del Carmen Giménez-Espert, M., (2016). Niveles de empatía en una muestra de enfermeras españolas. *Calidad de vida y salud*, 9(2).
- Delgado-Ballester, E. and J. L. Munuera-Alemán (2001). Brand trust in the context of consumer loyalty. *European Journal of marketing*.
- Dijkstra, T. K. and J. Henseler (2015). Consistent partial least squares path modeling. MIS quarterly, 39(2), 297-
- Duarte, P. A. O. and M. L. B. Raposo (2010). A PLS model to study brand preference: An application to the mobile phone market. *Handbook of partial least squares*, Springer, 449-485.
- Duberley, J., (2012). Philosophies underpinning qualitative research. Qualitative organizational research: Core methods and current challenges 15.

11(2), 20 30. intps://doi.org/10.3261/2e1040.0304143

- Dumitrescu, E.-I. and C. Hurlin (2012). Testing for Granger non-causality in heterogeneous panels. *Economic modelling*, 29(4), 1450-1460.
- Escalas, J. E. (2004). Narrative processing: Building consumer connections to brands. *Journal of consumer psychology*, 14(1-2): 168-180.
- Escalas, J. E. and J. R. Bettman (2003). You are what they eat: The influence of reference groups on consumers' connections to brands. *Journal of consumer psychology*, 13(3), 339-348.
- Fan, R. E. (2008). LIBLINEAR: A library for large linear classification. the Journal of machine Learning research 9, 1871-1874.
- Fellows, R. and A. Liu (2008). Impact of participants' values on construction sustainability. Proceedings of the Institution of Civil Engineers-Engineering Sustainability, Thomas Telford Ltd.
- Flick, U. (2011). Mixing methods, triangulation, and integrated research. *Qualitative inquiry and global crises*, 132(1), 1-79.
- Fragouli, E., et al. (2011). Cytogenetic analysis of human blastocysts with the use of FISH, CGH and aCGH: scientific data and technical evaluation. *Human Reproduction*, 26(2), 480-490.
- Gable, G. (2010). Strategic information systems research: An archival analysis. *The Journal of Strategic Information Systems*, 19(1), 3-16.
- Gambetti, R. C. and G. Graffigna (2010). The concept of engagement: A systematic analysis of the ongoing marketing debate. *International Journal of Market Research*, 52(6), 801-826.
- Gentles, S. J., et al. (2015). Sampling in qualitative research: Insights from an overview of the methods literature. *The qualitative report*, 20(11), 1772-1789.
- Goddard, W. and S. Melville (2004). Research methodology: An introduction, Juta and Company Ltd.
- Götz, O., et al. (2010). Evaluation of structural equation models using the partial least squares (PLS) approach. *Handbook of partial least squares*, Springer: 691-711.
- Governments, M. L. (2010). Research and Practice. Management, 19(2), 24-42.
- Graue, C. (2015). Qualitative data analysis. International Journal of Sales, Retailing & Marketing, 4(9), 5-14.
- Haider, A., & Ali, A. (2015). Socio-economic determinants of crimes: a cross-sectional study of Punjab districts. *International Journal of Economics and Empirical Research*, 3(11), 550-560.
- Hair Jr, J. F. (2016). A primer on partial least squares structural equation modeling (PLS-SEM), Sage publications.
- Hair, J. F. (2011). PLS-SEM: Indeed a silver bullet. Journal of Marketing theory and Practice, 19(2), 139-152.
- Henseler, J. (2009). The use of partial least squares path modeling in international marketing. New challenges to international marketing, *Emerald Group Publishing Limited*.
- Holbrook, M. B. and E. C. Hirschman (1982). The experiential aspects of consumption: Consumer fantasies, feelings, and fun. *Journal of consumer research*, 9(2), 132-140.
- Hollebeek, L. (2011). Exploring customer brand engagement: definition and themes. *Journal of strategic Marketing*, 19(7), 555-573.
- Imran, C. A. B., Shakir, M. K., & Qureshi, M. A. B. (2021). Regulatory Perspectives on AI in Autonomous Vehicles Global Approaches and Challenges. *The Asian Bulletin of Green Management and Circular Economy*, *1*(1), 62–74.
- Imran, C. A. B., Shakir, M. K., & Qureshi, M. A. B. (2022). Applications of Artificial Intelligence in Enhancing Construction Safety and Productivity. *The Asian Bulletin of Big Data Management*, 2(1), 63-74.
- Irick, M. L. (2008). Task-technology fit and information systems effectiveness. *Journal of Knowledge Management Practice*, 9(3), 1-5.
- Ismail, K., (2011). An investment framework to help equity financiers select tech SMEs in Malaysia. *Interdisciplinary Journal of Contemporary Research in Business*, 3(5), 966-983.
- Jackson, M. and C. Johansson (2003). An agility analysis from a production system perspective. Integrated Manufacturing Systems.
- Kassem, M. Ali, A. & Audi, M. (2019). Unemployment Rate, Population Density and Crime Rate in Punjab (Pakistan): An Empirical Analysis. *Bulletin of Business and Economics (BBE)*, 8(2), 92-104.
- Kim, S. and T. H. Baek (2018). Examining the antecedents and consequences of mobile app engagement. *Telematics and Informatics*, 35(1), 148-158.
- Kumekpor, T. K. (2002). Research methods and techniques of social research, SonLife Press & Services.
- Kuosa, T. (2011). Evolution of futures studies. Futures, 43(3), 327-336.
- Lam, S. Y. and V. Shankar (2014). Asymmetries in the effects of drivers of brand loyalty between early and late adopters and across technology generations. *Journal of Interactive Marketing*, 28(1), 26-42.
- Maklan, S. and P. Klaus (2011). Customer experience: are we measuring the right things? *International Journal of Market Research*, 53(6), 771-772.
- McLean, G. (2018). Examining the determinants and outcomes of mobile app engagement-A longitudinal perspective. *Computers in Human Behavior*, 84, 392-403.

11(2), 20 30. intps://doi.org/10.3261/2e1040.0304143

- Morgan, T. M. and L. D. Case (2013). Conservative sample size determination for repeated measures analysis of covariance. *Annals of biometrics & biostatistics* 1(1).
- Nasermoadeli, A. (2013). Evaluating the impacts of customer experience on purchase intention. *International Journal of Business and Management*, 8(6), 128.
- Neumeier, U. and P. Ciavola (2004). Flow resistance and associated sedimentary processes in a Spartina maritima salt-marsh. *Journal of Coastal Research*, 20(202), 435-447.
- Nunnally, J. C. (1978). An overview of psychological measurement. Clinical diagnosis of mental disorders, 97-146.
- Ozturk, A. B. (2016). The role of utilitarian and hedonic values on users' continued usage intention in a mobile hotel booking environment. *International Journal of Hospitality Management*, 57, 106-115.
- Qader, I. K. A. and A. B. Omar (2013). The evolution of experiential marketing: Effects of brand experience among the millennial generation. *International journal of academic research in business and social sciences*, 3(7), 331
- Rada-Iglesias, A., (2011). A unique chromatin signature uncovers early developmental enhancers in humans. *Nature*, 470(7333), 279-283.
- Ranjit, K. (2011). Research Methodology a step-by-step guide for beginners, Sage.
- Roca, J. C. and M. Gagné (2008). Understanding e-learning continuance intention in the workplace: A self-determination theory perspective. *Computers in Human Behavior*, 24(4), 1585-1604.
- Rossouw, J. E. (2002). Risks and benefits of estrogen plus progestin in healthy postmenopausal women: principal results from the Women's Health Initiative randomized controlled trial. *Jama*, 288(3), 321-333.
- Roussel, Y., Ali, A., & Audi, M. (2021). Measuring the Money Demand in Pakistan: A Time Series Analysis. *Bulletin of Business and Economics (BBE)*, 10(1), 27-41.
- Sahin, A., (2011). The effects of brand experiences, trust and satisfaction on building brand loyalty; an empirical research on global brands. *Procedia-Social and Behavioral Sciences*, 24, 1288-1301.
- Sajid, A. & Ali, A. (2018). Inclusive Growth and Macroeconomic Situations in South Asia: An Empirical Analysis. *Bulletin of Business and Economics (BBE)*, 7(3), 97-109.
- Sami, A. and A. Irfan (2020). Academic Achievement of college students based on Co-curricular Activities. *Journal of Management Info*, 7(1), 16-23.
- Saunders, M. N. (2011). The characteristics of innovative, mechanical products. *Journal of Mechanical Design*, 133(2).
- Saunders, P. and B. Bradbury (2006). Monitoring trends in poverty and income distribution: data, methodology and measurement. *Economic Record*, 82(258), 341-364.
- Saunders, S. R. and A. Aragón-Zavala (2007). Antennas and propagation for wireless communication systems, John Wiley & Sons.
- Schmitt, B. (1999). Experiential marketing. Journal of marketing management, 15(1-3), 53-67.
- Seligman, M. E. (2005). Positive psychology progress: empirical validation of interventions. *American psychologist*, 60(5), 410.
- Şentürk, İ., & Ali, A. (2021). Socioeconomic Determinants of Gender Specific Life Expectancy in Turkey: A Time Series Analysis. *Sosyoekonomi*, 29(49), 85-111.
- Snieder, R. and K. Larner (2009). The art of being a scientist: A guide for graduate students and their mentors, Cambridge University Press.
- Solomon, M. S. (2009). State-led migration, democratic legitimacy, and deterritorialization: the Philippines' labour export model. *European Journal of East Asian Studies*, 8(2), 275-300.
- Suls, J., (2002). Social comparison: Why, with whom, and with what effect? *Current directions in psychological science*, 11(5), 159-163.
- Taherdoost, H. (2016). Sampling methods in research methodology; how to choose a sampling technique for research. *How to Choose a Sampling Technique for Research*, (April 10, 2016).
- Terregino, C., (2007). Active surveillance for avian influenza viruses in wild birds and backyard flocks in Northern Italy during 2004 to 2006. *Avian Pathology*, 36(4), 337-344.
- Uma, S. and B. Roger (2009). Research Methods for Business 9th Edition. A Skill Building Approach, Academic Internet Publishers Incorporated.
- Wahyuni, D. (2012). The research design maze: Understanding paradigms, cases, methods and methodologies. *Journal of applied management accounting research*, 10(1), 69-80.
- Wiles, R., (2011). Innovation in qualitative research methods: A narrative review. *Qualitative research*, 11(5), 587-604.