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Purchase Intention for Smartwatch: A study with special reference to selected places of South Gujarat region.

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Abstract: *Smartwatch is one of the highly commercially acknowledged smart wearable. This study aims to check Model Fit for Proposed Research Model. It also aims to observe the structural relationship between factors influencing Purchase Intention and Attitude towards Purchase Intention. For the study, 960 data were collected from three places Surat, Navsari and Bardoli respectively using Quota and Non- Probability Convenience Sampling methods. To develop a hypothesized model, TAM (Technology Acceptance Model) and UTAUT (Unified Theory of Acceptance and Usage Intention) were studied. SEM (Structural Equation Modelling) using SPSS AMOS 26 was used to analyse data. Brand Image, Social Influence and Perceived Usefulness were identified as the strong influencers to Purchase Intention along with the Attitude for the smartwatch. Other factors such as Hedonic Motivation, Perceived Ease of Use, Perceived Risk and Perceived Compatibility do not have significant influence on Purchase Intention for Smartwatch. This study might be useful to academician for further research avenues regarding other smart wearables as well as marketers to have important consideration regarding promoting the product.*

Key Words: *Smart watch, Smart Wearable, Purchase Intention, Attitude.*

1. INTRODUCTION:

A smart watch is a wearable device which is similar to traditional wrist watch. A smart watch is multi-use communicating tool rather than a mere collaboration of watch and different applications of a phone. It is the wearable with different functionalities. Researchers have used smart watches in health care applications, industrial application and medical application as well. (Bachmann et al., 2015) propose the use of smart watches and smart phones. Some models called watch phones have mobile cellular functionality like making calls. These devices assess physiological (steps taken, heartbeats etc.) and smart phone data (phone calls, Messages, Application etc.) that enables the affective state of a user to be imitative. Software includes digital maps, schedulers, personal organizers, calculators and various kinds of watch faces. Smartwatches have wide applications for maintaining health and also be used for different other purposes by a user apart from a normal functionality of watching time. (Hermsen et al., n.d.) argue that the use of smart watches provides feedback on behaviour and also provides further monitoring of behaviour that had previously remained unknown. The potential of smart watches to widen fields such as learning has been explored with reference to other smart wearable devices.

2. LITERATURE REVIEW:

This study focuses on Purchase Intention of customers towards smart watch. If customers have positive attitude, customer may likely to purchase a specific good. Key determinants like perceived value, perceived content regarding hardware and software, design aesthetics may lead to positive attitude that can be converted into purchase intention (K. L. Hsiao & Chen, 2018). Positive relationship between attitude and purchase intention was identified for smart watch (K. L. Hsiao & Chen, 2018; Dastan, 2016). (Reeder & David, 2016) understood that Smart watches have the potential to support health in day-to-day life by enabling self-monitoring of personal activities, getting feedback based on activity measures. Using the mobile health application patients can take early preventive actions and treatments. TAM (Technology Acceptance Model) brings an important model to the research field, with a simple and powerful structure

for predicting technology acceptance of users (Venkatesh, science, et al., n.d.). To use technology acceptance theories, (Venkatesh, Morris, et al., n.d.) proposed UTAUT (Unified Theory of Acceptance and user Technology), which integrated eight models in order to give theoretical explanation to the potential users' intention and behaviour in adopting a new technology.

Perceived Usefulness and Perceived Ease of Use are the constructs of Technology Acceptance Model which are renamed by UTAUT model as Performance Expectancy and Effort Expectancy (Adapa et al., 2018; Bae & Chang, 2012; Y. J. Kim et al., 2009). Perceived ease of use is yet another most focused attributes as according to one's own ability to access and use product, customers compare the difficulty level to use new product and take final decision regarding purchase and use of the same. Perceived Compatibility as one of the perceived characteristics of IDT helps to generate more detailed evaluation of innovation. Change in behavioral pattern may be subtle where minor differences in habits, usage patterns in daily life and own experiences may not affect the decision but major changes may cause resistance with reference to any decision for smartwatch (Wu et al., 2016). As smart watch is one of the most acceptable wearables and preferred too among youngsters, perceived enjoyment with reference to fun using smart watch is important to have focus on. (Altuntaş & Akyüz, 2018; K. J. Kim, 2016; Dickinger et al., 2008). Aesthetic factors may build around look and image, self-expressiveness, visibility and fashion and technology (Krey et al., 2019) which is a part of Hedonic Motivation as it indicates nonfunctional part of a smartwatch. (Nasir & Yurder, 2015) also focused on physician's risk perceptions regarding wearable health technology and considered the same as one of the major barriers to develop trust regarding wearable technologies where study was conducted for elderly people and their security purpose. It includes different risks like Performance Risk, Social Risk, Financial Risk, Privacy Risk. Social norms contribute in usefulness of innovation or new technology where communication among peers gives a person information about different functionalities of new technology. Social norms affect adoption and purchase intention (Dickinger et al., 2006). People tend to crate 'Social Image' within their community by adopting behavior on the basis of observations which is true for mobile technology and can be identified with smart wearables (Yang et al., 2016). Brand is one of the prominent factors which affect choice and adoption intention of consumer for new technology product. It is more important in case of product with unique functionality. Choosing a branded product help to deal with financial, functional and psychological risk (Almeida et al., 2017; Jung et al., 2016) with its honest, reliable and hardworking image to deal with uncertain product qualities. Brand has positive impact on behavioural intention for an electronic product (Almeida et al., 2017; Bian & Moutinho, 2011). Attitude is the main factor influencing consumers' purchase and usage intention. Purchase intention is all about the possibility of purchasing innovation or new technology (K. L. Hsiao & Chen, 2018). Different constructs like Perceived Usefulness, Compatibility, Relative Advantage, Ease of Use, Hedonic Motivation, Aesthetic appeal, Social Influence affect the attitude of Consumers which lead consumers towards purchase intention.

3. MATERIALS:

For the research TAM and UTAUT theories were studied. Structural Equation Modelling was used to check Model fit and structural relation among different factors affecting Purchase Intention and Attitude using Model Fit Indices. AMOS 26 was used to apply SEM.

4. METHODS:

The study aims to check Model Fit for Hypothesized research Model. It also aims to observe the structural relationship between factors influencing Purchase Intention and Attitude towards Purchase Intention. Data were collected from 960 samples from Surat (Metro City), Navsari (City) and Bardoli (town) using Quota and Non-Probability Sampling Method. Quota sampling was used to derive samples from three different place Surat, Navsari and Bardoli. After that Non-Probability Convenience Sampling method was used to derive samples from each place. Data were collected in time span of four months.

Below Hypothesized Research Model is used for the study. (Shown in Figure 1).

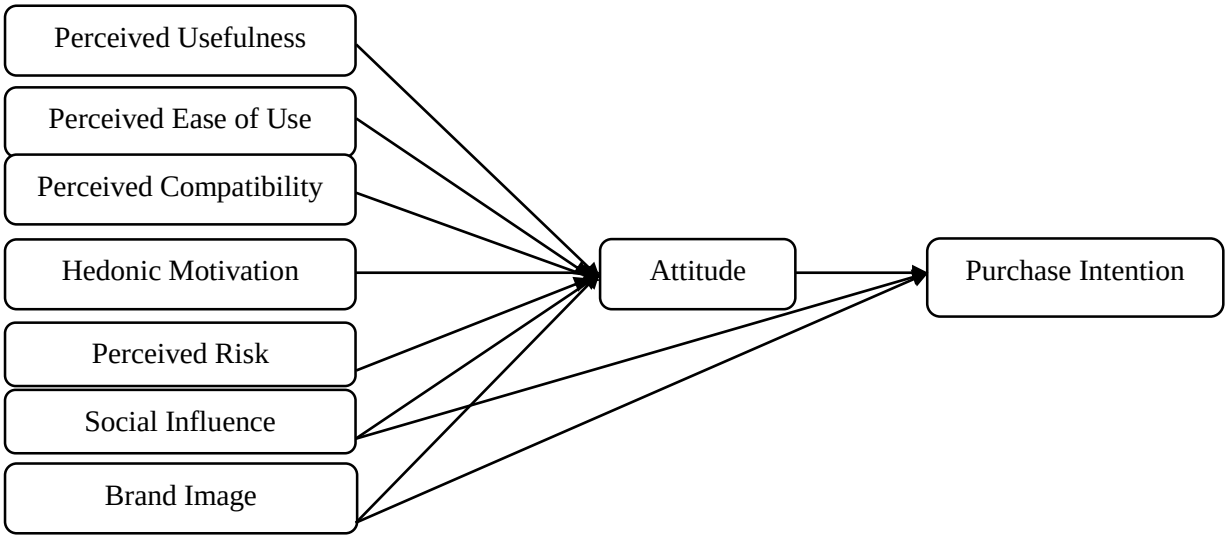

Figure 1: Hypothesized Research Model

5. ANALYSIS:

The constructs are reliable as their CR (Composite Reliability) value is greater than 0.7. If CR>0.7, CR>AVE and AVE>0.5 as per (Hair et al., 2011) for meeting the convergent validity of the data. One can approve whether the measured variables comply with discriminant validity or not by referring AVE and Maximum Shared Variance (MSV).

	CR	AVE	MSV	MaxR(H)	BI	EOU	PC	SI	AT	PR	HM	PU	PI
BI	0.827	0.615	0.518	0.837	**0.785**								
EOU	0.872	0.695	0.453	0.885	0.486	**0.833**							
PC	0.881	0.649	0.440	0.883	0.550	0.703	**0.805**						
SI	0.907	0.709	0.421	0.912	0.630	0.582	0.323	**0.842**					
AT	0.920	0.659	0.518	0.923	0.720	0.619	0.663	0.439	**0.811**				
PR	0.885	0.564	0.494	0.893	0.703	0.490	0.590	0.567	0.617	**0.750**			
HM	0.849	0.585	0.473	0.853	0.441	0.567	0.449	0.507	0.458	0.533	**0.764**		
PU	0.886	0.660	0.503	0.894	0.699	0.592	0.570	0.643	0.631	0.663	0.688	**0.812**	
PI	0.876	0.704	0.503	0.889	0.587	0.673	0.422	0.649	0.674	0.502	0.657	0.709	**0.838**

Table 1: Validity and Reliability Test

5.1 Chornbach's Alpha for Reliability Test:

As the value for the same is 0.965 which is higher than 0.7, it can be said that reliability is achieved.

5.2 Structural Model Fit Estimation:

Structural equation modelling is a statistical technique which is a combination of factor analysis and multiple linear regressions. The observed variables are grouped to form a construct by estimating their contribution to the latent variables and finding the interrelationship between them.

Indices	Recommended Value	Model Fit Indices
CMIN/df	<3	2.776
GFI	≥0.90	0.828
AGFI	≥0.80	0.778
NFI	≥0.90	0.862
CFI	≥0.90	0.906
RMSEA	≤0.08	0.07

Table 2: Structural Model Fit Indices

Path Diagram: Structural Equation Modelling

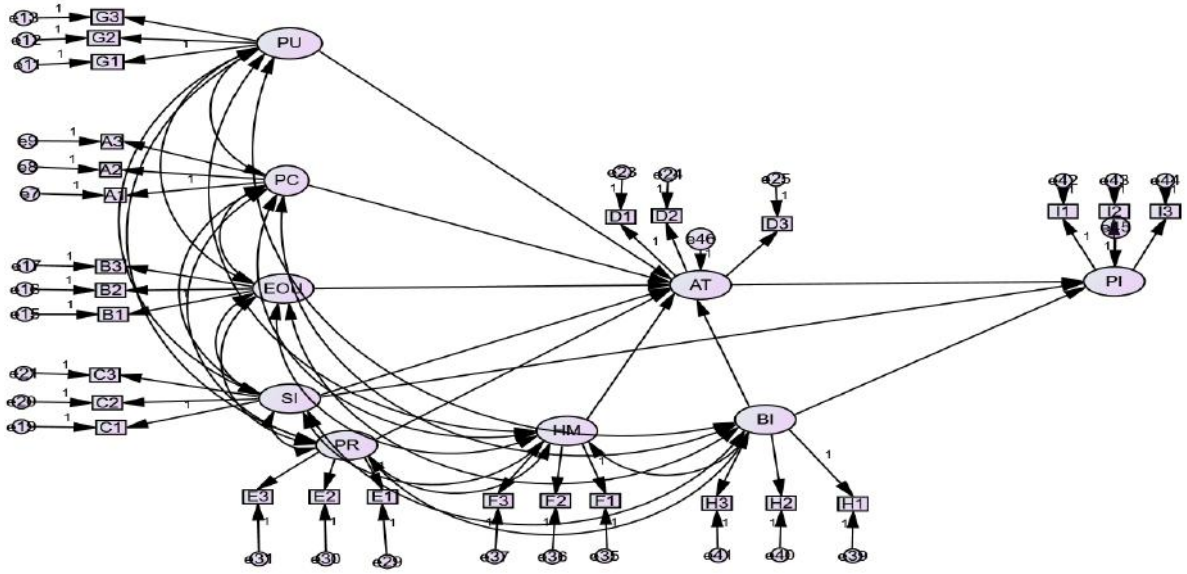

Figure 2: Path Diagram: Conceptual Framework of Research Model for Purchase Intention for Smartwatch

Table 3:Result: Estimated Standardized Regression Weights of the Hypothesis

No.	Hypothesis	Standardized Regression Weights	P Value	Significant/Not Significant
H1	There is significant impact of Perceived Compatibility on Attitude.	0.196	0.147	Not Significant
H2	There is significant impact of Perceived Ease of Use on Attitude	2.164	0.267	Not Significant

H3	There is significant impact of Perceived Usefulness on Attitude.	0.475	0.007	Significant
H4	There is significant impact of Perceived Risk on Attitude.	0.161	0.414	Not Significant
H5	There is significant impact of Hedonic Motivation on Attitude.	0.611	0.357	Not Significant
H6	There is significant impact of Social Influence on Attitude.	0.300	***	Significant
H7	There is significant impact of Brand Image on Attitude.	0.511	0.002	Significant
H8	There is significant impact of Social Influence on Purchase Intention.	0.156	0.001	Significant
H9	There is significant impact of Brand Image on Purchase Intention	0.176	0.028	Significant
H10	There is significant impact of Attitude on Purchase Intention.	0.251	***	Significant

6. Findings: Model Fit

The structural model fit is being checked based on CMIN/df, Goodness of Fit (GFI), Adjusted Goodness of Fit (AGFI), Root Mean square of approximation (RMSEA). The Model fit indices for the constructs have been found and the summary of the result is shown in the Table above where the obtained Model fit indices are compared with the recommended value. The result CMIN/df is shown in the table as 2.776 which is below than the acceptable limit 3. The obtained GFI value is 0.828 which is not equal to the recommended value of 0.9 but nearer to the recommended value. The obtained AGFI value is 0.778 which is nearer to the recommended value of 0.8. The obtained RMSEA value is 0.07 which is lesser than the recommended value of 0.08. the NFI value is 0.862, CFI value is 0.906 which is above 0.9 the recommended value. Hence, we can conclude that the hypothesised model fits with the sample data. The model is having nearer to perfect fit.

7. Findings: Structural Relationship

- In line with the research hypothesis, significant influence of Perceived Usefulness, Social Influence, Brand Image was found on Attitude for purchasing smartwatch as the respective p-values of Perceived Usefulness (0.007), Brand Image (0.002) and Social Influence (***) is less than 0.05. It was also found for Social Influence (with p-value 0.001) on Purchase Intention, Brand Image (with p- value of 0.028) on Purchase Intention and Attitude (with p-value of ***) on Purchase Intention.
- On the contrary with research hypothesis, significant influence of Perceived Ease of Use (0.267), Perceived Compatibility (0.147), Perceived Risk (0.414) and Hedonic Motivation (0.357) was not found on Attitude for purchasing smartwatch as their p-values are greater than 0.05.

8. Discussion:

In line with earlier researches Perceived Usefulness is found to have significant impact on Attitude. (Choi & Kim, 2016a; Krey et al., 2016; Rodosthenous et al., 2018) found the significant impact of Perceived Usefulness on Attitude towards different behavioural intention aspects (Acceptance, purchase, adoption, Usage) of smartwatch. In line with earlier researches, Ease of Use is not found to have significant impact on Attitude to have Purchase Intention for Smartwatch. (Choi & Kim, 2016a; Chuah et al., 2016; Heijden et al., 2003; K.-L. Hsiao, 2017; Jeong et al., n.d.; Teun Koldeweij, 2014; Krey et al., 2016; Wu et al., 2016). In line with earlier researches, Perceived Compatibility is not

found to have significant impact on Attitude to have Purchase Intention for Smartwatch which is supported by earlier research studies of (Wu et al., 2016). Contrary to the stated, Perceived compatibility was found to have significant impact on Attitude (Choi & Kim, 2016b; K.-L. Hsiao, 2017). In line with earlier researches, Social Influence is found to have significant impact on Attitude. Contrary to the stated, Social Influence was found to have significant impact on Attitude affecting Behavioural Intention as per (TBJ Koldeweij, 2017). Social Influence is found to have significant impact on Purchase Intention for smartwatch which is not in line with the earlier study conducted by (K. L. Hsiao & Chen, 2018). Hedonic Motivation is not found to have significant impact on attitude. Contrary to the stated it is found for perceived aesthetics which is a part of hedonic motivation by (Jeong et al., n.d.).Perceived risk is not found to have significant impact on Attitude which is supported by the earlier research study done by (Heijden et al., 2003). Brand image is found to have significant impact on purchase intention of smartwatch like results of other studies (Bian & Moutinho, 2011) which is contrary to the result obtained by (Yeo et al., 2016). Attitude is found to have significant impact on Purchase Intention (aspect of Behavioural Intention) in line with other research findings like (Chuah et al., 2016; K. L. Hsiao & Chen, 2018; TBJ Koldeweij, 2017).

9. RECOMMENDATION:

The study can be used for other smart wearables by researchers in future. Future research work can take place about usage intention of smartwatch and may have focus on aesthetic consideration of smartwatch. Further study can be conducted based on different geographic area and also based on some demographic characteristics like occupation, education.

10. Implication of the study:

It helps the academicians as it opens about the strength of different factors for Purchase Intention for Smartwatch. The research also provides the close link between various dimensions of Attitude and Purchase Intention. It will definitely help the academicians and researchers who want to work in the future perspectives of Smartwatch and related to Purchase Intention. It may also help the Marketers of Smartwatch to give more emphasize on certain factors like Usefulness and Social Influence at the time of promoting the product.

11. CONCLUSION:

From the study, it can be concluded that the work done by previous researchers in the area of Purchase Intention for Smartwatch that all the factors affecting purchase intention need not be seen always in a positive or negative connotation. Not all factors for purchase intention neither good nor bad. It depends on the context, environment and perception of the customers which decides whether the factors affecting purchase intention are significant or not significant. Model fit is observed for hypothesized research model. Perceived Usefulness, Brand Image and Social Influence results in a positive outcome towards Attitude which has its positive impact on the Purchase Intention for Smartwatch while other factors were found to be dysfunctional towards influencing Purchase Intention for smartwatch.

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