
**A STUDY ON CUSTOMER'S BEHAVIOURAL INTENTION TO PURCHASE
SMARTWATCH WITH REFERENCE TO PERCEIVED USEFULNESS,
PERCEIVED EASE OF USE AND PERCEIVED RISK**

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ABSTRACT

Smart wearable is the one of the fastest growing industries all over the world as per IDC Report 2022. From the same, Smartwatch along with fit bands are some of the fastest accepted commercial wearables. The aim of the study is to observe the model fit of the hypothesized research model. Another aim of the study is to identify the influence of perceived usefulness, perceived ease of use and perceived risk on attitude influencing purchase intention for smartwatch. The study was conducted in Surat, Navsari and Bardoli in South Gujarat region of India. The hypothesized research model was developed based on the model of Technology Acceptance (TAM). Total respondents considered for the study was 300. The data was collected using on probability convenience sampling from the specific cities or town. AMOS was used to analyse data. Structural equation modelling was applied in the study. It was identified that perceived usefulness and perceived risk were having influence on attitude for purchasing the smartwatch while perceived ease of use was not having significant influence on purchase intention for smart watch.

Keywords: Smart watch, Smart wearables, Purchase Intention, Perceived Usefulness, Perceived Ease of Use, Perceived Risk

I. INTRODUCTION

Smartwatch is becoming one of the necessities nowadays. Everyone, most specifically youth is adopting smartwatch as one of the needed gadgets to maintain their lifestyle. Smartwatch is available in the market in range of features, functionalities and prices. People can choose a smartwatch as per their requirement and affordability. Different brands are securing their market share in this lucrative category of product as per IDC Report 2022. Smartwatch provides different set of sports modes, health updates and basic facilities of smartphone like notifications, cameras, call facility and music. Smartwatch is termed as a combination of wristwatch and smartphone. The research aimed to

study purchase intention as people are already aware with the use of traditional watch and smartphone which lead customers to have the smartwatch.

II. LITERATURE REVIEW

TAM (Technology Acceptance Model) brings an important model to the research field, with a simple and powerful structure for predicting technology acceptance of users (V Venkatesh, science, et al., n.d.). TAM is derived from the Theory of Reasoned Action (TRA). (F. Davis et al., n.d.) said that the theory work on the individual's perceived usefulness and perceived ease of use towards an innovation, which then determines the attitude toward use, behavioural intention to use, and at last the actual use of the innovation.(Venkatesh Robert Smith & Morris, 2000) said that, TAM is used to be applied to information systems on either at organizational or individual level with other concepts. (Y Park et al., n.d.) adopted TAM as a fundamental model to explain the use of web-based training systems. (Johnson Jr et al., 2012) investigated a new decision support system used in clinics by using TAM.

Perceived Usefulness and Perceived ease of use are constructs of TAM (Technology Acceptance Model). Both the constructs play crucial role in adopting an innovation after which it leads to positive attitude and intention to purchase and use the technology or innovative product or service with reference to utilitarian perspective (Adapa et al., 2018; Altuntaş&Akyüz, 2018; Nov & Ye, 2008; L. H. Wu et al., 2016) .Both the constructs are having strong and significant effect on attitude of a consumer. Perceived Usefulness is one of the most focused attributes as customers always try to have some performance from the product. 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 Usefulness is similar to Performance Expectancy and Perceived Ease of Use is similar to effort expectancy constructs of UTAUT (Adapa et al., 2018; Bae & Chang, 2012; Y. J. Kim et al., 2009). Perceived Usefulness and Perceived Ease of Use can be included in Perceived benefits of Wearable Technology (Kalantari, 2017) as they enhance the efficiency of people in completing daily routine activities and have greater impact on perceived value derived by consumers. Perceived benefits and perceived risk construct the final perceived value regarding the new technology. It shows that Smartwatch is not

just a fashion accessory which attracts a youngster but its usefulness takes attention of service personals, too (H. Yang et al., 2016). Talking about usefulness and ease of use of smart watch, need to consider its good, bad and worst side which is done by (Cecchinato et al., 2015) where it was found that to reduce user's dependency on a smartphone, smartwatch is one of the best alternatives that can be opt for. On the contrary, he also commented that some of the users really don't understand the actual benefit of a smartwatch and are in confusion regarding its functionality. It is been observed by (Dehghani et al., 2018) that operational imperfection is a terminology which can be associated with perceived ease of use as it focuses on technological hurdles and handling issues regarding any new technological product.

Perceived Risk is one of the most important aspects associated with purchase decision of smart wearables as perceived risk work as one of the barriers to have purchase intention for smart watches. Physical Risk (which can harm body), Financial Risk (related to money) , Social Risk (coming from society) , Environmental Risk and most importantly Performance risk is associated with it (Kalantari, 2017). Studying Perceived Risk is more important for probable users than actual users as probable users may be trying the new product for the first time and by judging all perceived risk, they may go for having or not having positive attitude towards purchase intention.(H. Yang et al., 2016) studies Perceived Risk as consumers' insight about adverse consequences or uncertainty regarding behavioural intention specifically purchase decision of a product. The consequences can be positive or negative. Negative consequences will be named as associated risk. As uncertainty is associated with these consequences, it may have complex adverse effect on purchase decision. (Nasir & Yurder, 2015) also focused on physician's risk perceptions regarding wearable health related technology and considered the same as one of the major barriers to develop trust regarding wearable technologies where study was conducted for aged people and their protection purpose.

III. RESEARCH METHODOLOGY

The study aims to observe the Model Fit for the hypothesized research model. It also aims to check the structural relationship among Perceived Usefulness and Behavioral Intention to Purchase smartwatch. It also aims to check structural

relationship between Perceived Ease of Use, Perceived Risk and Behavioral Intention to Purchase a smartwatch .For the research, a total of 300 responses were collected using structured questionnaire which was administered online. The data were collected from three different places of south Gujarat region of India named Surat city, Navsari city and Bardoli town. The data were collected using Non-Probability Convenience Sampling Method. The data were collected in the time span of fourmonths. For analysis the data, AMOS was used. CFA (Confirmatory Factor Analysis) was performed to identify data validity and reliability using stats tool package.

IV. RESULTS and DISCUSSIONS

From the above Table 1, it can be said that the constructs are reliable as all the constructs are having their CR (Composite Reliability) value which is greater than 0.7. If As per the study conducted by (Hair et al., 2011), if the $CR > 0.7$, $CR > AVE$ and $AVE > 0$, the data meet the requirement of Validity. Chronbach's Alpha value for data is 0.957 which is greater than 0.7 which indicated that data reliability is achieved.

Analysis: Hypothesis

Findings of Model Fit of Hypothesized Research Model

The structural model fit is being observed and finalized based on different model fit indices like CMIN/DF, Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Root Mean square of approximation (RMSEA) and p value. The result CMIN/DF is shown in the table 2 as 2.113 which is below than the acceptable limit 3. The obtained GFI value is 0.899 which nearer to the recommended value of 0.9. The obtained AGFI value is 0.853 which is greater than the recommended value of 0.8. The obtained RMSEA value is 0.075 which is lesser than the recommended value of 0.05, CFI value is 0.949 which is above 0.9 the recommended value. Hence, we can conclude that the hypothesised model fits with the sample data. The model is acceptable and having good fit.

Findings: Structural Relationship

In line with the research hypothesis, significant influence of Attitude (with p-value of ***) on Behavioural Intention to purchase Smartwatch. the significant influence of Perceived Usefulness (with p-value of ***) is found on attitude

towards behavioural intention to purchase smartwatch. the significant influence was also found for Perceived Risk (with p-value of 0.075) on Attitude towards behavioural intention to purchase smartwatch.

On the contrary with research hypothesis, significant influence of Perceived Ease of Use (with p-value of 0.346) was not found on Attitude for having behavioural intention to purchase smartwatch as their p-values are greater than 0.05.

Discussion

Perceived Usefulness is not found to have significant impact on Purchase Intention as per (Heijden et al., 2003; K. L. Hsiao & Chen, 2018). Contrary to the stated Performance Expectancy which also known as perceived Usefulness does not find to have significant impact on behavioural intention as per (Chuah et al., 2016; Teun Koldewej, 2014; Sun et al., 2009). In line with earlier researches, Ease of Use is not found to have significant impact on Attitude to have Purchase Intention for Smartwatch which is supported by the study of (Choi & Kim, 2016a; Chuah et al., 2016; Heijden et al., 2003; K.-L. Hsiao, 2017; Jeong et al., n.d.; Teun Koldewej, 2014; Krey et al., 2016; Wu et al., 2016). Contrary to the result attained in the study (Sun et al., 2009) it was found that perceived ease of use was having significant impact on Behavioural Intention for Mobile Commerce -one of the innovations for the market operations. Contrary to the result obtained in current study, 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; Yeo et al., 2016). Attitude is found to have significant influence on Purchase Intention (aspect of Behavioural Intention) in line with other research findings like (Altuntaş & Akyüz, 2018; Chuah et al., 2016; Hsiao & Chen, 2018; Koldewej, 2017).

V. CONCLUSION

Model fit for the proposed hypothesized research model was identified as the indices of Structural Model are meeting the recommended value requirements of Model Fit. Perceived Ease of Use was not found as significant influencers towards Attitude to have behavioural intention to purchase smartwatch. Perceived Usefulness and Perceived Risk were found to have significant influence of behavioural intention to purchase smartwatch. Attitude was

identified to have significant impact on Behavioural intention to purchase smartwatch.

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List of Tables

Table 1: Data Reliability and Validity

	CR	AVE	MSV	MaxR(H)	PI	EOU	PR	PU	AT
PI	0.867	0.685	0.486	0.878	0.828				
PEOU	0.791	0.657	0.410	0.828	0.530	0.811			
PR	0.816	0.598	0.211	0.823	0.380	0.287	0.773		

	CR	AVE	MSV	MaxR(H)	PI	EOU	PR	PU	AT
PU	0.823	0.608	0.464	0.823	0.675	0.583	0.302	0.780	
AT	0.898	0.747	0.486	0.911	0.697	0.640	0.459	0.681	0.864

(Note: AT: Attitude, PU-Perceived Usefulness, PEOU- Ease of Use, PR- Perceived Risk, BITP- Behavioural Intention to Purchase; All factors are considered with reference to Smartwatch)

Table 2: Structural Model Fit Indices

Indices	Recommended Value	Observed measures for Hypothesized research Model
P value	≥0.05	0.00
CMIN/DF (Chi Square /Degree of Freedom)	≤3	2.113
GFI (Goodness of Fit Index)	≥0.90	0.899
AGFI (Adjusted Goodness of Fit Index)	≥0.90	0.853
CFI (Comparative Fit Index)	≥0.90	0.949
RMSEA (Root Mean Square Error of Approximation)	≤0.05	0.075

(Note: Reference for recommended values of Structural Model Fit is taken from (Hu L.-T. & Bentler P. M., 1999)

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

No.	Hypothesis	Standardized Regression Weights	P value	Significant/Non-Significant
H1	There is significant influence of Perceived Usefulness on Attitude.	0.632	***	Significant
H2	There is significant influence of Perceived Ease of use on Attitude.	0.214	0.346	Not Significant
H3	There is significant influence of Perceived Risk on Attitude.	0.138	0.075	Significant
H4	There is significant influence of Attitude on Behavioural Intention to Purchase Smartwatch.	0.066	***	Significant

List of Charts

Figure 1: Hypothesized Research Model

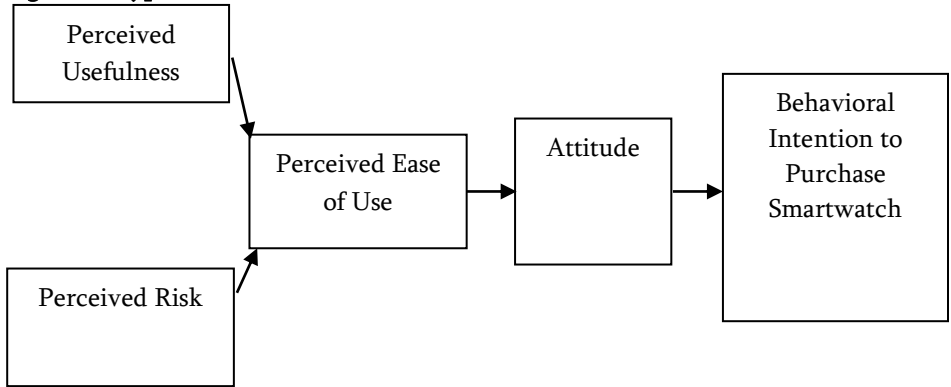
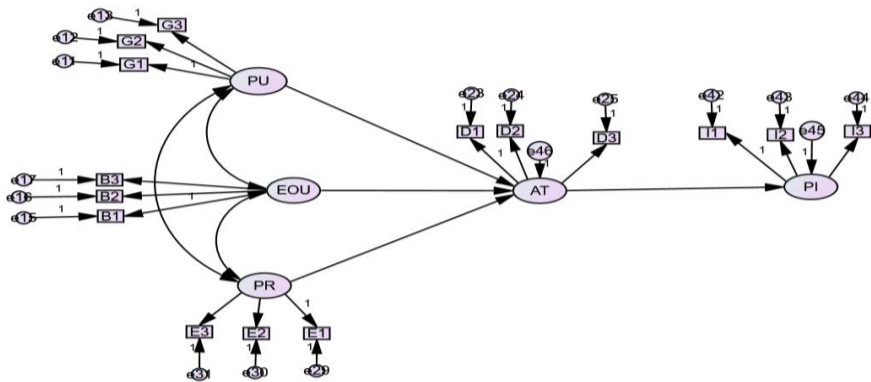



Figure 2: Path Diagram: Structural Equation Modelling



Authors Profile

Ms. Kruti Bhatt (MBA, BE) is pursuing Ph. D in Marketing. She qualified in GSET (Management). Her areas of interest are Consumer Behaviour, Service Marketing, Integrated Marketing Communication and Digital Marketing. She is having 6 years of post-graduate teaching experience and 1 year of teaching experience at graduation level at Commerce and Management Department, Uka Tarsadia University, Bardoli. She had attended many programs, seminars and conferences for her academic development. She has won the Best research paper award at the International



<p>Conference of Management. She had presented and published many research papers and attended conferences too.</p>	
<p>Dr. Jitesh Parmar (Ph.D., PGDRM, MBA, BE) has more than twenty years of Post Graduate teaching experience. He has attended many programs for his academic development across different states of India. He has presented many research papers in reputed conferences. His research work has been published in many National and International Level Journals. One of his papers won the second prize at “National Conference on Marketing of Financial Services”, Pune. Currently he is managing Uka Tarsadia University Examination function.</p>	 A portrait photograph of Dr. Jitesh Parmar, a man with short dark hair and glasses, wearing a dark suit jacket, a white shirt, and a patterned tie. He is looking directly at the camera with a slight smile.