

# A Study on the Factors Influencing the Adoption / Usage of Wearable Gadgets

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**Abstract**—The purpose of this research was to look into various factors that are influencing the adoption habits of Wearable devices in India. Based on the literature reviewed, we explored the influence of a range of factors on the willingness to adopt wearable devices. These include factors such as peer-influence, tech-savviness, ads / promotional impact, personality of an individual, impact on an individual because of the devices emitting radiation. The study was conducted using a cross-sectional survey of 125 individuals from different demographic backgrounds in terms of education, income and occupation. Our results indicate that style and the brand preferred could be the essential driving factors that influence the buying of Wearables. Ease of use of the gadget also matters. The sense of belonging, watching ads on online shopping advertisements, susceptibility to peer influence, the love for gadgets, and concern with radiation emitted from a gadget - all have an impact on whether people own a Wearable or not or whether they would want to buy one or not.

**Keywords**—Wearables, Influencing factors, Adoption of Innovations, Peer-influence, Tech-savviness, Promotional impact, Personality, Radiation emitting devices, Style, Brand, Sense of belongingness, Online shopping ads.

## I. INTRODUCTION

An entirely new technology has emerged recently that is catching the fancy of firms and consumers alike – Wearables. Since their advent in the past few years there have been a number of top brands coming up with these new exciting gadgets. Be it a smart watch or a fitbit all one needs to do is wear them around their wrist. These have several uses most of which are similar to those of a smart phone. Hence, there arise a few questions that are to be asked that if such devices are really the need of the hour in an era where there are so many apps available in our smart phones? Can the usage habits differ from person to person depending on their personalities? What factors

would motivate consumers to buy wearables? Can ads / promotions make an impact on the adoption / non-adoption of these wearables, what could be the different driving factors in order to adapt to these wearable devices. In this research we investigate the factors driving the existing and intended adoption of wearables such as fitbits.

## LITERATURE REVIEW

- A. In their paper on the “**Use and Adoption Challenges of Wearable Activity Trackers**”, Shih et al note that Wearable activity trackers are becoming widely adopted, yet challenges continue to exist in effective long-term use and adoption. Existing research focuses on the use and adoption challenges associated with functional issues <sup>[2]</sup>. Little is known about how personal preferences and distinct individual characteristics affect use and adoption of wearables. Their research suggests that gender differences can make an impact on the decision making factor if one should buy a wearable <sup>[2]</sup>.
- B. In their paper on the “**Motivation and User Acceptance of Using Physiological Data to Support Individual Reaction**” Fessler et al report from the experiments that they conducted in workplaces that people (employees) wanted to adopt newer gadgets that measured their fitness levels provided there was some stress measuring equipment in those gadgets <sup>[3]</sup>. Hence, the presence or absence of such features in the wearable may be another factor driving their adoption.
- C. In their paper on “**Explaining consumer acceptance of handheld Internet devices**” Bruner and Kumar contend that consumers that are more visually oriented than others are likely

to adopt these devices that appear good in their hands when they wear them [8]. Furthermore, more anxious people are less inclined towards newer technologies. Demographic details such as age, income and gender also impact the adoption of newer handheld and wearable gadgets. Finally, promotions and Ads can impact the decision of adopting new wearable gadget [9].

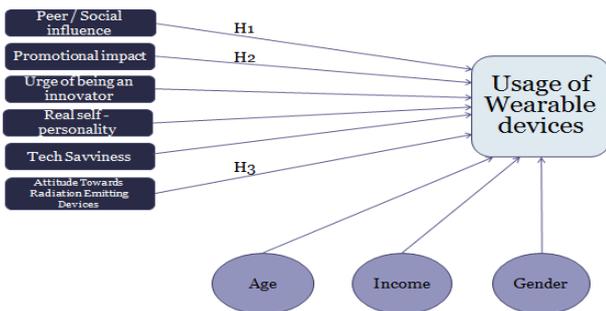
D. In their paper on the “**Opportunities and challenges of the Internet of Things for healthcare**” Fernandez and Pallisnote that there are some who use these wearables just because someone gifted them the devices [1]. And also a considerable number of women refrained from using wearables because they complained that they don’t match the look of their outfits [1]. Thus, like other studies this research too suggests that gender plays a role in the decisions on whether or not to buy a wearable gadget.

## II. METHODOLOGY

### A. Research Objective

There are different factors that contribute towards the adoption / non-adoption of a gadget, even for the newer wearable gadgets. While the earlier papers have already found that the functional aspects could be some of the significant reasons for their adoption , few have looked at the impact of personality and other affect related variables on the adoption of wearables. The primary objective of this paper is thus to conceptualize and empirically test an extended model of adoption of wearables.

### B. Conceptual Model



### C. Hypotheses

H1 = Peer / Social environment influences the adoption of wearables.

H2 = Ads / promotions / TV shows influences the adoption of wearables.

H3 = Attitude towards Radiation emitting devices influences the adoption of Wearables.

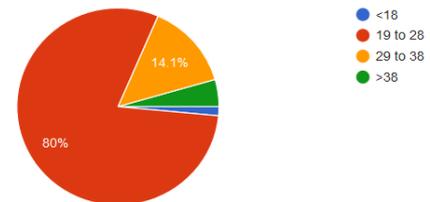
### D. Measures

A questionnaire was created with several sections included in it. Few questions were taken from the Gadget Lovers scale – 2007 just as reference to get the questions not as a scale or a sub-scale or sub-sections of the scale. Hence, the analyses have been done on the individual variables basis and not according to the calculations of the scale.

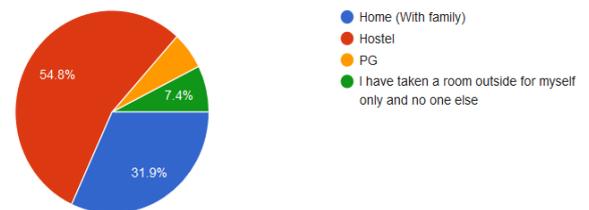
### E. Sampling and Data Collection

Judgemental sampling was done for the research. The demographic details for 125 responses have been described in the following:

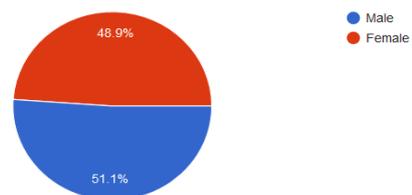
Age (135 responses)



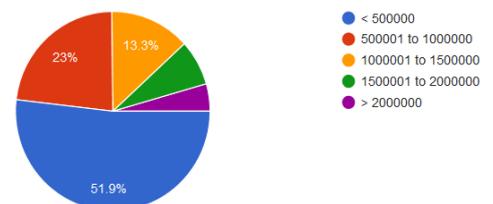
Where do you stay? (135 responses)



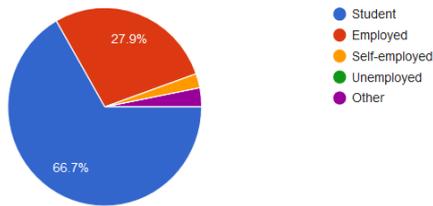
Gender (135 responses)



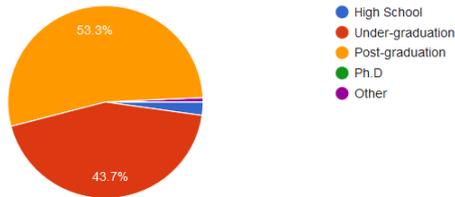
Annual income (Rupees) (135 responses)



### Occupation (129 responses)



### Highest educational qualification (135 responses)



### III. ANALYSES

Number of observations – 125

P value – 0.000

TABLE I. ADOPTION OF WEARABLE DEVICES

Independent Variables	Results of the Regression Model		
	OR	Co-efficient	P-value
Young	0.114562	-2.53	0.012
Income	16.22259	3.67	0.000
Driving factor - Style	5.723621	1.70	0.089
Driving factor - Brand	3.441356	1.35	0.177
Driving factor - Price	1.555125	0.55	0.581
Driving factor - Requirement	0.334244	-1.40	0.161
Sense of Belongingness	0.04763	-2.81	0.005
Ease of use	8.839642	2.60	0.009
Gadget's look	2.256634	0.79	0.428
Place	0.6935	-0.49	0.625
Watch Online shopping Ads mostly	0.122298	-2.69	0.007
Peer influence	28.82273	2.75	0.006
Adoption of newer gadgets	11.8999	3.04	0.002
Gender	0.7515	-0.39	0.699
Thought of not buying a gadget due to radiation	0.3817	-2.15	0.032
Didn't buy a gadget because of radiation	2.2056	2.01	0.044

### IV. RESULTS

All the above factors that have come significant have direct relationship with people owning a wearable or not.

- People with income of less than five lacs owned wearables more than the ones having higher income.
- Gender didn't come out to be significant with respect to owning of wearables.
- People who watch online shopping ads on TV owned wearable devices.
- People who got hugely influenced socially (peer influence) more owned wearables.
- Ease of use was more important for the people who owned wearables.
- People who thought radiations emitted from these gadgets were harmful didn't own wearables.
- Driving factors like Brand and Price were found to be significant in terms of owning wearables.

### V. IMPLICATIONS

Thus, we get to know a lot of useful insights from this study with regards to how a wearable gadget can be positioned and to what type of customers. Very often we miss out on the small yet important details about our customers / potential customers which might otherwise prove to be useful. Marketers and advertisers should focus on these details to establish the right kind of connect with their customers. They should keep studying the usage patterns of their customers with regards to these newer technologies and should make sure that they are using it for a longer period of time. If not, it could mean that it's just a fashion bubble that is causing all of this which also means a long-term approach from the marketer's perspective to stay for long in the market and in the minds of the customers.

### VI. LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

The research was conducted with a smaller group of 125 people. Looking at it from a larger perspective could lead us to further interesting results. Hence, an ideal sample size of about 200-250 would do good. Also, In some cases like the age groups taken here have not been distributed. As most of them were below 28 years of age we took into consideration only two categories for age (below 28 and above 28). Likewise, for location also there wasn't an even distribution of the different areas. Whereas certainly many other age group are clearly possible. Adding to that we also took questions from one of the

proven scales – Gadget Lovers – 2007 but didn't consider the whole of it which has already been proven. There are many more scales available for this kind of studies which could be considered while designing the questionnaire. From the study point of view no paper was found on doing research based on one's personality and one's buying decisions of these gadgets which was tried here but no proper scale was found that linked both personality and buying habits of wearable gadgets. This would have enhanced our research to a higher level.

## VII. REFERENCES

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