

IS TECHNOLOGY AN IMPORTANT FACTOR IN THE SALES OF SMARTWATCHES?"

Ramya

Research scholar CT University

ABSTRACT

The increasing interest in smartwatches among the people is the main reason that has amplified the interest to research the topic. People's obsession about smartwatches has been increasing rapidly. The main aim of this research paper is to identify whether the technology factor that influence the sales smartwatches. The study identifies how the technology effect the sales of smartwatches and the purchase intention of consumers regarding smartwatches and how the technology improve the quality of work and helps in increasing productivity. This paper puts the emphasis on how the consumer preference technology in the selection of the smartwatches and which factor plays the more significant role in smartwatches purchase intention. This research paper used primary data that has been collected through a structured survey questionnaire by using random sampling using a 5-point Likert scale technique from 111 college students in the city of Ludhiana.

Keywords: Technology, smartwatches, factors, quality of life, productivity, Likert scale.

INTRODUCTION

HISTORY OF SMARTWATCHES

Smartwatches have been around since the early 1970s. The Hamilton Pulsar, introduced in 1972, was one of the earliest digital watches. This year marks the first time that computers have become small enough to fit into a wristwatch. The Calcron calculator watch, which had a nine-digit display, was another early digital watch.

Seiko Data 2000, released in 1983, was another smartwatch precursor. It could hold two 1,000-character memos and could be connected to a keyboard that came with the watch for typing memos.

In 1984, Seiko debuted the RC 1000. It was connected to a computer. Seiko introduced the Receptor Message Watch in 1990, a watch that could receive pager messages. Wearable computers became more complex in terms of data storage and battery life throughout the 1990s.

Microsoft's Smart Personal Objects Technology was used in some of the earliest smartwatches (SPOT). In 2004, Fossil and Suunto released the first SPOT watches. Using frequency modulation transmitters, the watches were able to receive news, weather, and stock updates, as well as email and instant messages.

Smartwatches gained popularity in the 2010s. Popular ones such as Apple Watch — released in 2013 — began to take on a role in the mobile computing market. Google developed Android Wear, a mobile OS, in 2014.

TECHNOLOGY

Technology is the outcome of accumulated knowledge and application in all techniques, skills, methods, and procedures utilised in industrial production and scientific study that is always evolving. For the intended aim of an organisation, technology is incorporated in the operation of all machines, with or without thorough understanding of their function. Systems are the building blocks of society's technologies. By collecting an input, adjusting this input for the system's intended purpose through a process, and then creating an outcome that changes the system's final intended purpose, systems apply the intended application of a technology's acquired knowledge. A technology system, or technical system, is another name for this.

While technology, technological advancements, and ultimately society's pursuit of the technological singularity have aided economies in developing and creating a leisure class, many technological processes produce undesirable by-products, such as pollution and the depletion of natural resources in the Earth's environment. As a result, philosophical discussions have erupted about the employment of technology and whether it helps or aggravates the human situation. While this is true, transhumanism and techno-progressivism ideologies see ongoing technology progress as good to society and the human condition. Despite the fact that technology is still being questioned and disputed, its vital role as the backbone of industrial production and scientific study continues to thrive.

While technology, technological advancements, and ultimately society's pursuit of the technological singularity have aided economies in developing and creating a leisure class, many technological processes produce undesirable by-products, such as pollution and the depletion of natural resources in the Earth's environment. As a result, philosophical discussions have erupted about the employment of technology and whether it helps or aggravates the human situation. While this is true, transhumanism and techno-progressivism ideologies see ongoing technology progress as good to society and the human condition. Despite the fact that technology is still being questioned and disputed, its vital role as the backbone of industrial production and scientific study continues to thrive.

SMARTWATCHES

A smartwatch is a wearable computer device that functions similarly to a smartphone. It provides atomic clock accuracy at a glance and allows you to view your text messages on a gadget that is always nearby.

Smartwatches are also referred to as smart wristwatches.

A smartwatch has a watch, a phone, a calculator, a camera, GPS navigation, an SD card, a touchscreen, and a rechargeable battery, among other things.

Smart Personal Object Technology (SPOT), developed by Microsoft, is the technology underpinning the smartwatch. It aims to customise common items.

WEARABLE'S

Only technology that is capable of navigation and aiding services qualifies as "wearable technology". Furthermore, marketing is a significant application of wearable technology.

Wearables can be used to collect data on customers or users as well as their surroundings. Customers' buying habits, activities, and location can all be aggregated this way. This data is extremely useful to businesses since it gives customer insights that can be used to improve the customer experience. Wearable device classes have been developed by researchers and industry representatives.

Fitness, medical, leisure, gaming, and infotainment were divided into five main sectors based on functionality in a market analysis issued by Cognizant Solutions Corp. Mobile phones are further away from people's bodies than wearable devices. These devices have been tested and are now being widely distributed. They differ from traditional mobile phones or laptop computers in that they work without interruption and are more closely linked to the body than other personal electronics.

Incorporating information technology to enable autonomous interaction and information processing. Technology is 'smart' because of its capability. Smartwatches, fitness trackers, contact lenses, smart clothes, smart rings, headbands, and bracelets are examples of wearable technologies. Google Glass, Microsoft HoloLens, Apple Watch, Pebble Smartwatches, Fitbit activity trackers, and many others are examples of manufacturers. Individuals and businesses can benefit from a wide range of applications. Communication, information, entertainment, fitness and health tracking, education, navigation, and supporting services are all examples of wearable applications. Furthermore, marketing is a significant application of wearable technology. Wearables can be used to collect data on customers or users as well as their surroundings.

Customers' buying habits, activities, and location can all be aggregated this way. This data is extremely useful to businesses since it gives customer insights that can be used to improve the customer experience.

SMARTWATCHES AND TECHNOLOGY

Without involvement of technology the smartwatch is just a watch which only shows the time like the traditional wrist watch uses to do so.

The technology is the main reason behind the smartwatch as under the smartwatch meaning it has been cleared by the various scholars while conducting their research.

What features do smartwatches offer?

Smartwatches offer many features like :

- Health informatics: Like as heart rate, blood oxygen level, blood pressure and temperature monitoring;
- Contactless payments and digital wallet applications;
- Messaging and calling features, similar to those on a smartphone;
- Emergency calls for assistance if the watch detects the wearer has fallen;
- Social media and other notifications from synchronized smartphone applications;
- Games, music, photos and other entertainment options;

- Location features, such as maps, a compass and an altimeter; and
- GPS tracking.

Smartwatches offer capabilities that can be used for certain purposes. Police officers and firefighters, for example, might use a smartwatch application to receive dispatch alerts. Smartwatches with unique satellite navigation features are worn by pilots in the United States Air Force.

Smartwatches are usually connected to the user's smartphone. Many of the same features and applications found on the phone are also found on the watch, and they may be synced. Apple Watch users must also have an Apple iPhone.

FUTURE OF SMARTWATCHES

In the previous 50 years, smartwatches have evolved significantly. They can now track, store, and send detailed information about the wearer.

Biometric data is one area where many smartwatch makers are concentrating their efforts. Smartwatches can track fitness data such as daily steps taken and body composition. They can also monitor and detect possible medical problems. Manufacturers are always looking for new methods to include more health-related features into smartwatches.

The increased focus on healthcare is partly due to the rise of chronic disorders that require ongoing monitoring. In this case, smartwatches are useful. Smartwatches are also excellent for recognising COVID-19 exposure and contact tracking due of their combination of GPS, health, and mobility aspects. Doctors can provide more tailored care and diagnose ailments before they become serious with more real-time visibility into a patient's health data. According to Research and Markets, the worldwide wearables industry would rise 19.48 percent between 2021 and 2026.

Collecting health data from wearables could pose a cybersecurity concern. Learn how security administrators and healthcare organisations can safeguard sensitive health information collected by wearable devices.

RESEARCH OBJECTIVE

The main research objective behind this study is to find out the factor of technology in the sales of smartwatch. Do technology the main reason behind the sales of smartwatches or not and how the technology helps in increasing productivity and improved quality of work.

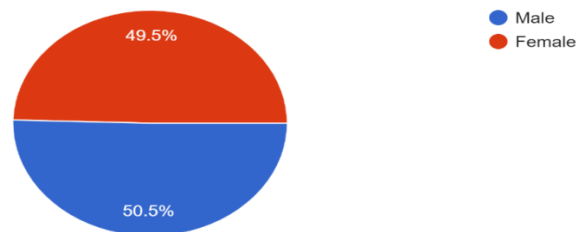
RESEARCH METHODOLOGY

The data in this research paper is collocated through primary data through a structured survey questionnaire by using random sampling technique using through a 5-point Likert scale survey questionnaire from 111 respondents in the Ludhiana city.

EMPIRICAL FINDINGS

1. From the data collected from the questionnaire out of 111 respondents 56 were male and 55 were females which was almost 50-50 percent. As shown in the pie chart. (Figure 1)

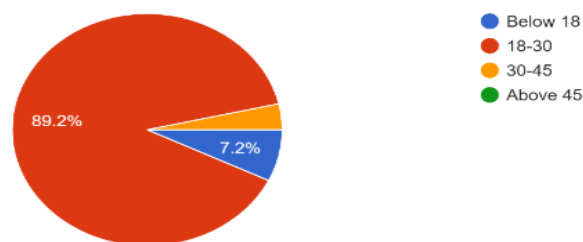
Gender
111 responses



(Figure 1)

- From the data of 111 respondents 101 respondents were of age group below 18 while 8 respondents of age group between 18-30 years and 2 respondents were of age above 30. (Figure 2)

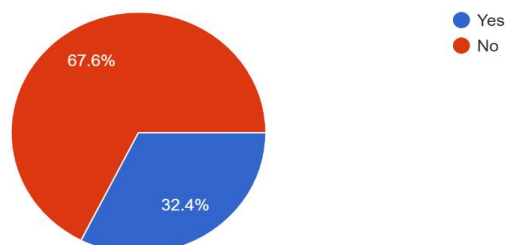
Age
111 responses



(Figure 2)

- From the data collected 75 respondents owns smartwatches while 36 don't own smartwatches. (Figure 3)

Do you own smartwatch
111 responses



(Figure 3)

4. By using data using Likert 5 scale from strongly disagree to strongly agree the following answers were obtained related to from 111 respondents.

Q1. Do the technology of smartwatches is very high.

Q2. I feel that smartwatches would improve the quality of my work.

Q.3 I feel that smartwatches would increase my productivity.

Statistics related the above questions were as follows: Frequencies				
		Factors affecting customers perception regarding smartwatches Please indicate your opinion on the following statements. 1 2 3 4 5 [The technology of smartwatches is very high]	Satisfaction level regarding smartwatches. Please indicate your opinion on the following statements. 1 2 3 4 5 [I feel that smartwatches would improve the quality of my work]	Satisfaction level regarding smartwatches. Please indicate your opinion on the following statements. 1 2 3 4 5 [I feel that smartwatches would increase my productivity]
N	Valid	111	111	111
Mean		3.84	3.667	3.54
Median		4.00	4.000	4.00
Mode		4	4.0	4
Std. Deviation		1.005	1.0646	1.126
Variance		1.010	1.133	1.269
Range		4	4.0	4
Sum		426	407.0	393

(Table 1)

Frequency Table

Factors affecting customers perception regarding smartwatches Please indicate your opinion on the following statements. 1 2 3 4 5 [The technology of smartwatches is very high]					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	6	5.4	5.4	5.4
	disagree	4	3.6	3.6	9.0
	neither agree nor disagree	18	16.1	16.2	25.2
	agree	57	50.9	51.4	76.6
	strongly agree	26	23.2	23.4	100.0
Total		111	99.1	100.0	
Missing	System	1	.9		
Total		112	100.0		

(Table 2)

Satisfaction level regarding smartwatches. Please indicate your opinion on the following statements. 1 2 3 4 5 [I believe that smartwatches would improve the quality of my work.]					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	4	3.6	3.6	3.6
	disagree	14	12.5	12.6	16.2
	neither agree nor disagree	21	18.8	18.9	35.1

	agree	48	42.9	43.2	78.4
	strongly agree	24	21.4	21.6	100.0
	Total	111	99.1	100.0	
Missing	System	1	.9		
Total		112	100.0		

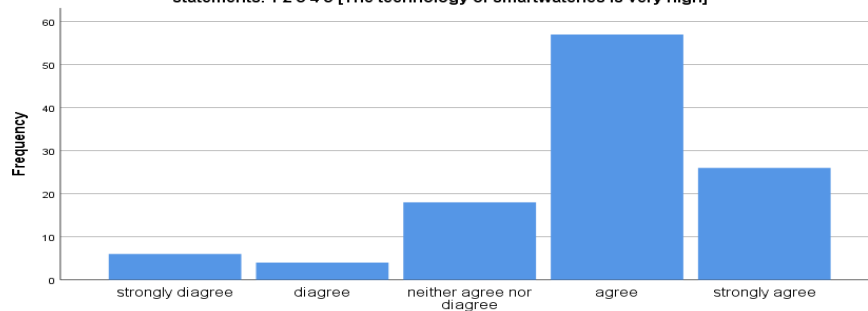
(Table 3)

Satisfaction level regarding smartwatches. Please indicate your opinion on the following statements. 1 2 3 4 5 [I believe that smartwatches would increase my productivity.]				
		Frequency	Percent	Cumulative Percent
Valid	strongly disagree	5	4.5	4.5
	disagree	20	17.9	22.5
	neither agree nor disagree	17	15.2	37.8
	agree	48	42.9	81.1
	strongly agree	21	18.8	100.0
	Total	111	99.1	100.0
Missing	System	1	.9	
Total		112	100.0	

(Table 4)

Bar Chart

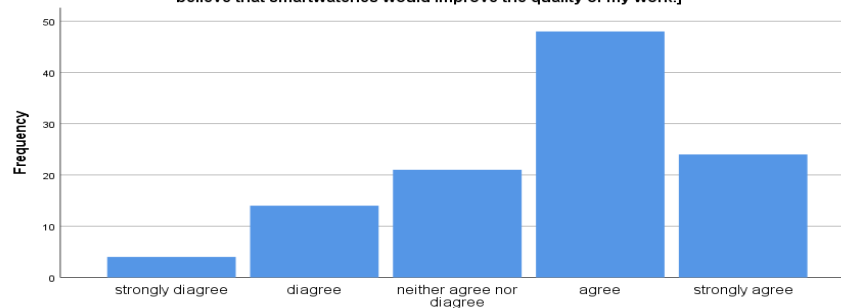
Factors affecting customers perception regarding smartwatches Please indicate your opinion on the following statements. 1 2 3 4 5 [The technology of smartwatches is very high]



Factors affecting customers perception regarding smartwatches Please indicate your opinion on the following statements. 1 2 3 4 5 [The technology of smartwatches is very high]

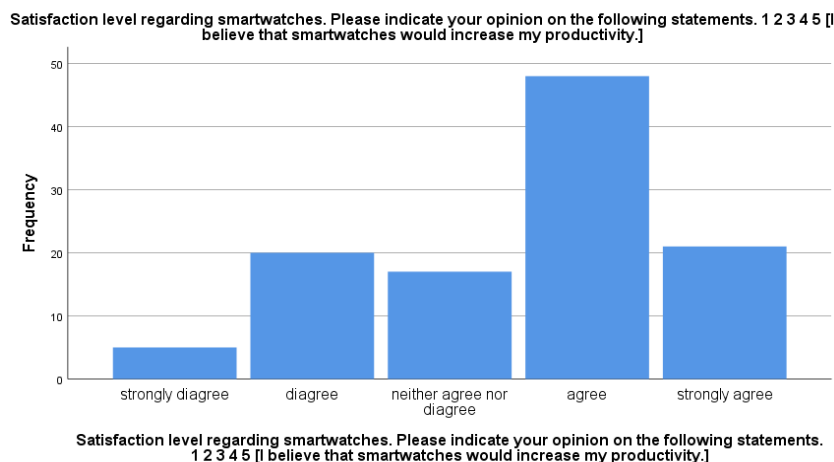
(Bar 1)

Satisfaction level regarding smartwatches. Please indicate your opinion on the following statements. 1 2 3 4 5 [I believe that smartwatches would improve the quality of my work.]



Satisfaction level regarding smartwatches. Please indicate your opinion on the following statements. 1 2 3 4 5 [I believe that smartwatches would improve the quality of my work.]

(Bar 2)



(Bar 3)

CONCLUSION

From the above research related to smartwatches sales and does the technology plays an important role in the sales the conclusion was obtained as the technology does affect the sale of smartwatches as per the primary data collected more than 70% of the respondents agree and strongly agrees that the technology used in the smartwatches is very high which positively influence the sales of smartwatches as shown in the above frequency table 2. As the result of that the respondents link the technology with their life and responses that the technology also helps the in improving quality of life (table 3) and the productivity has been increased by using the smartwatches (table 4). As per the frequency table 1 Mode is 4 in all the cases which represents the most of the people responded agree to the questions.

As per the results of smartwatches technology respondents will able to get the notification which was relevant to them and focuses on their studies and will also help them to avoid the distractions which was caused due to use mobile phones if they are in their hands.

Some respondents have responded that they customized the notifications on smartwatches which were relevant to them like some important calls which helps their time by keep phone aside through no notifications on of social media which would help them to increase their productivity.

While some responded also responded that the technology of smartwatches would also able them to track their health status like number of steps covered in day, heart rate, pulse rate and many more.

So, the conclusion is that the technology is the important factor in the sales of smartwatches.

Scope of Future Research and Limitations

The limitation of this research was that it only targeted the college students and it only targets Ludhiana region due to the constraint of time and money. the area of other regions of Punjab wouldn't able to be covered so this research only related to Ludhiana region.

For further study the other area of Punjab would be covered by more questions and more factors that contribute to the sales of smart watches like design, price, colour and material used etc.

REFERENCES

1. Almuraqab, N. A. S.(2021). Determinants that Influence Consumers' Intention to Purchase Smart Watches in the UAE: A Case of University Students, *Advances in Science, Technology and Engineering Systems Journal* Vol. 6, No. 1, 1249-1256 (2021).
2. Bonino, D., Corno, F., & De Russis, L. (2012). dwatch: A personal wrist watch for smart environments. *Procedia Computer Science*, 10, 300-307.
3. Bieber, G. , Haescher, M., &Vahl, M. (2013, May): Sensor requirements for activity recognition on Smartwatches. (In the proceedings of the 6th International Conference on Pervasive Technologies Related to Assistive Environments, 1-6) .
4. Boletsis, C., McCallum, S., & Landmark, B. (2015). The Use of Smartwatches for Health Monitoring in Home-Based Dementia Care. *Spring Publishing* ,Volume 9194. p. 15-26.
5. Cecchinato, M. E., Cox, A. L., & Bird, J. (2015, April). Smartwatches: the good, the bad and the ugly?. In *Proceedings of the 33rd Annual ACM Conference extended abstracts on human factors in computing systems* (pp. 2133-2138).
6. Chuah, S. H. W., Rauschnabel, P. A., Krey, N., Nguyen, B., Ramayah, T., & Lade, S. (2016). Wearable technologies: The role of usefulness and visibility in smartwatch adoption. *Computers in Human Behavior*, 65, 276-284.
7. Dehghani, M., Kim, K. J., & Dangelico, R. M. (2018). Will smartwatches last? Factors contributing to intention to keep using smart wearable technology. *Telematics and Informatics*, 35(2), 480-490.
8. Fac, P. K., &Venkateshwarlu, V. (2017). Consumer perception and purchase intention towards Smartwatches, *IOSR Journal of Business and Management*, 19(01), 26-28.
9. Gaeta, C. M. (2016). Quit playing with your watch: Perceptions of Smartwatches use.Open acces thesis769.
10. Gurusamy, M., Arthi, D., Priyanka, N., & Sindhu, M.(2018): The future of Smartwatches- A Study on consumers' behavior towards wrist watches in Paavai educational institutions at Namakkal. *IJARIIIE-ISSN(O)-2395-4396*, Vol-4 Issue-2 2018
11. Halamata, A.N. (2013): Consumer behavior and brand preference of Titan watches- An empirical study with reference to Haveri district, Karnataka. *IOSR Journal of Business and Management (IOSR-JBM) ISSN: 2278-487X*. 7(1) 01-07

12. Huynh.V., Joel.K., Sunil, K.&Shabid, S.(2020): Life cycle assessment summary Samsung Galaxy Watch. Aalto University, School of Electrical Engineering, ELEC-E8714
13. Huang, R., & Sarigöllü, E. (2014). How brand awareness relates to market outcome, brand equity, and the marketing mix. In Fashion branding and consumer behaviors (pp. 113-132). Springer, New York, NY.
14. Johnson, K. M. (2014): An Investigation into the Usefulness of the Smartwatches Interface for, University Students. Rhodes University. Thesis classification under the ACM Computing Classification System (1998 version, valid through 2014) [16]:
15. Lyons, K. (2015, September). What can a dumb watch teach a smartwatch? Informing the design of smartwatches. In Proceedings of the 2015 ACM international symposium on wearable computers (pp. 3-10).
16. Lu, T. C., Fu, C. M., Ma, M. H. M., Fang, C. C., & Turner, A. M. (2016). Healthcare applications of smart watches. *Applied clinical informatics*, 7(03), 850-869.
17. King, C. E., & Sarrafzadeh, M. (2018). A survey of smartwatches in remote health monitoring. *Journal of healthcare informatics research*, 2(1), 1-24.
18. Moazen, D. (2015). Utilizing Smart Watch Motion Sensors in Human Computer Interaction via Pattern Detection (Doctoral dissertation, California State University, Northridge).
19. Melo, S. C. N. D. (2017). The future of Smartwatches: a case on the current status and expected category evolution on the Portuguese market (Doctoral dissertation).
20. Shahid, Z., Hussain, T., & Zafar, F. (2017). The impact of brand awareness on the consumers' purchase intention. *Journal of Marketing and Consumer Research*, 33(3), 34-38.
21. Sama, R. (2019). Impact of media advertisements on consumer behaviour. *Journal of Creative Communications*, 14(1), 54-68.
22. Town, O. B. I. B.(2015).Customer Perception towards Mobile services- A case study, *international research journal of engineering and technology*,2(4), 2395-0056-0072
23. Vaghela, P. S. (2012). Customer preference for mobile number portability. *International Journal of Management and Social Sciences Research (IJMSSR)*, 1(3), 71-75.
24. Vanitha, P., & Subramanian, S. (2020). A Study on Brand Awareness and Customer Engagement. *EXECUTIVE EDITOR*, 11(03), 3263.
25. Wu, L. H., Wu, L. C., & Chang, S. C. (2016). Exploring consumers' intention to accept Smartwatches, *Computers in Human Behavior*,64, 383-392.

WEBSITES

- <https://en.oxforddictionaries.com>

- www.statisticshowto.com
- <https://punjab.gov.in/know-punjab/>
- <https://www.esopb.gov.in/static/PDF/EconomicSurvey-2019-20.pdf>
- <https://www.samsung.com/in/watches/all-watches/>
- <https://www.samsung.com/in/watches/all-watches/>
- [https://www.cusb.ac.in/images/cusb-files/2020/el/cbs/MCCOM2003C04%20\(Business%20Research%20Methods\)Research_h_Methodology_C_R_Kothari.pdf](https://www.cusb.ac.in/images/cusb-files/2020/el/cbs/MCCOM2003C04%20(Business%20Research%20Methods)Research_h_Methodology_C_R_Kothari.pdf)