

A STUDY ON STUDENTS PREFERENCE ON SMARTWATCHES

ABI.D.S

(40410005)



SCHOOL OF MANAGEMENT STUDIES

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

Accredited with Grade “A” by NAAC|12B status by UGC| Approved by AICTE

Jeppiaar nagar, Rajiv Gandhi salai, Chennai-600119

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SCHOOL OF MANAGEMENT STUDIES

BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **ABI.D.S (40410005)** who has done the Project work entitled **A STUDY ON STUDENTS PREFERENCE ON SMARTWATCHES** under my supervision from January 2022 to March 2022.

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Submitted for Viva voice Examination held on_____.

Internal Examiner

External Examiner

DECLARATION

I ABI.D.S (40410005) hereby declare that the Project Report entitled **A STUDY ON STUDENTS PREFERENCE ON SMARTWATCHES** done by me under the guidance of DR. J. RANI MBA., M.Phil., Ph.D., Associate Professor, School of Business Administration is submitted in partial fulfillment of the requirements for the award of Master of Business Administration degree.

DATE:

PLACE:

ABI.D.S

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ABI.D.S

TABLE OF CONTENTS

CHAPTER NO.	TITLE	PAGE NO.
	ABSTRACT	vii
	LIST OF TABLES	viii
	LIST OF CHARTS	ix
1	INTRODUCTION	1-9
	1.1 Introduction	1
	1.2 History of smartwatches	2
	1.3 Smartwatch applications	3
	1.4 Industry profile	4
	1.5 Company profile	5
	1.5.1 Apple Smartwatches	5
	1.5.2 FitBit Smartwatches	6
	1.5.3 Garmin Smartwatches	7
	1.6 Need for the study	8
	1.7 Objectives of the study	9
2	REVIEW OF LITERATURE	10-13
3	RESEARCH METHODOLOGY	14-15
	3.1 Research design	14
	3.1.1 Descriptive Research Design	14
	3.2 Sources of Data	14
	3.3 Structure of questionnaires	14
	3.4 Sampling Technique	14
	3.4.1 Convenience Sampling Method	14
	3.5 Sample Size	14

	3.6 Period of Study	14
	3.7 Analytical Tools	15
	3.7.1 Percentage analysis	15
	3.8 Hypothesis Testing	15
4	DATA ANALYSIS AND INTERPRETATION	16-37
	4.1 Percentage Analysis	16
	4.2 One-Way Anova test	34
	4.3 Chi-Square test	36
5	FINDINGS, SUGGESTIONS AND CONCLUSION	38-39
	5.1 Findings	38
	5.2 Suggestions	39
	5.3 Conclusion	39
	References	40-41
	Bibliography(Questionnaires)	42-44

ABSTRACT

Students are keen to make use of new technologies to enhance their learning. At the latest, the launch of the smartwatch has made the general public aware of the smartwatch and the possibilities, at least according to the marketing hype, that these wearable computers offer. The sales of smartwatches are predicted to increase rapidly in the next years and many of the adopters of this technology will undoubtedly be students. Smartphones have become embedded in everyone's life. However, smartwatch as an extension of smartphones have experienced a different thing. The main aim of the study is to find which brand of smartwatch has highest usage. To know the perception of students in smart watches and to find which specification in smartwatch has highest usage. The study was taken between students with 106 respondents over 3 months. The study concluded that many students were highly interested to buy smartwatches. The study further touches on their efficient management of power, easy user interface and the minimal display. Many respondents suggested that battery life of the smart watch must be improved. Some of the devices were stop responding in sometimes this problem must be sorted out. Many respondents suggested that waterproof tech also must be improved. Display these watches are not comfortable for the vision so the display must be altered with other type of screen. Body built is not so much strong so it is very danger to use smartwatch while playing games, so the body must be built strong.

LIST OF TABLES

Table no.	Particulars	Page no.
4.1	Gender of the respondents	16
4.2	Age of the respondents	17
4.3	Educational qualification of respondents	17
4.4	Most preferred smartwatch brand	18
4.5	Most liked specification in smartwatch	19
4.6	Does the price of the smartwatch is affordable	20
4.7	Purpose of buying smartwatch	21
4.8	Will you prefer to replace smartwatch	22
4.9	Preference of information smartwatch to tell	23
4.10	Ratings for health & wellness features of smartwatch	23
4.11	Ratings for battery performance of smartwatch	25
4.12	Disadvantage of smartwatch	26
4.13	Is the features are easily understandable	26
4.14	Do you think smartwatches give accurate data on health and wellness	27
4.15	Is the smartwatch worth for its price	28
4.16	Does smartwatch helps you in studies	29
4.17	Satisfaction level for design of smartwatch	30
4.18	Satisfaction level for availability of apps in smartwatch	31
4.19	Specification you like to be inserted in smartwatches	32
4.20	Satisfaction level for speakers in smartwatch	32
4.21	Overall satisfaction for smartwatch	33

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4.7	Purpose of buying smartwatch	21
4.8	Will you prefer to replace smartwatch	22
4.9	Preference of information smartwatch to tell	23
4.10	Ratings for health & wellness features of smartwatch	24
4.11	Ratings for battery performance of smartwatch	25
4.12	Disadvantage of smartwatch	26
4.13	Is the features are easily understandable	27
4.14	Do you think smartwatches give accurate data on health and wellness	27
4.15	Is the smartwatch worth for its price	28
4.16	Does smartwatch helps you in studies	29
4.17	Satisfaction level for design of smartwatch	30
4.18	Satisfaction level for availability of apps in smartwatch	31
4.19	Specification you like to be inserted in smartwatches	32
4.20	Satisfaction level for speakers in smartwatch	33
4.21	Overall satisfaction for smartwatch	34

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The development and advance of technology are enormous this time. The most emerging technology by now is the Internet of Thing (IoT) which allow many technological devices to be connected through the internet. One of the implementations is wearable devices, the wireless sensor attached in the body that open new experiences to the daily life activities. Although experiments on wearables have been conducted since the early 1980s, wearables have only recently come into general users. Smartwatch is regarded as the first commercialized wearable device for consumer. Today's smartwatches run mobile operating system and function as a portable media player, FM radio player, audio, and video files through a Bluetooth or Wi-Fi connection. Smartwatch also has the ability as the extension of its pairing smartphone in providing phone call and texting features. According to the research from Counterpoint's Global Smartwatch Tracker, global smartwatch shipments grew 37% in Q2 2018 with Apple domination with 41% share. Further, smartwatch makers are looking to add cellular connectivity for standalone use-cases as 90% of smartwatches shipped today are not cellular capable. As many researchers developed studies on smartwatch usage and factor adoptions [6, 7, 8, 9, 10], none of them explore the influence factors that affecting customer's perceptions toward smartwatch, regarding its usability, brand, and pricing. This study closing this gap and provide a deep understanding of Indonesian user perception of a smartwatch. The growth of smartwatch in Indonesia has encountered ups and downs. Although, it had been booming during 2013-2014. It had declined by the end of 2017. Recently, the market for wearable devices is starting to stretch again. In September 2017 Smartwatch & Wearables survey conducted by DailySocial.id in collaboration with JakPat Mobile Survey Platform has measured the response of Indonesian consumer to smartwatches, fitness bands, and other wearable devices, it revealed that almost all respondents have heard about the smartwatch, but only 43.15% said they had a smartwatch. 78.33% of respondents who had never had a smartwatch felt that the price of a smartwatch was still

too high. Only 21.43% of respondents knew the smartwatch brand besides Apple watch. As in Indonesia, some other countries reported were facing the same condition of the growing sales on the smartwatch in 2015-2016. In this study, the factor of usability, brand, and pricing factors are studied to determine their influence on the customer's perceptions toward smartwatch usage. Customer perception in this research is referring to Indonesian smartwatch users who already owned or used smartwatch in their daily lives. By understanding the consumer perceptions toward smartwatch, the result of this study is expected to be an excellent input for smartwatch producers, sales, and distributors.

1.2 HISTORY OF SMARTWATCHES

Watches had appeared a long time ago, but have you ever wondered when did the first-ever smartwatch appear? This device is more than a timepiece because it has additional functions like heart monitoring and activity tracking. But other than that, most smartwatches today have GPS that allows you to tell where the wearer is. But before you explore the device's exciting features, would it be better to go back in time and learn when it was first used? Read on and learn the history of smartwatches. Many watch experts point to the Microsoft SPOT (Smart Personal Object Technology) when it comes to the earliest smartwatches. Although it was only introduced in 2004, this device has many features that a smartwatch should have. For instance, SPOT has received information such as weather, news, and stock updates through FM radio. Not only that, but it was also capable of receiving e-mail and instant messages. However, one of its downsides is that the user cannot reply to the messages. Smartwatches instantly became popular despite their higher price compared to traditional watches. This is because people have seen its potential of becoming an all-in-one device where you can receive time and weather updates, and news, all while looking stylish. Not only that, but smartwatches have become more innovative because watch companies have added GPS trackers, heart monitoring, etc. If you are considering buying a smartwatch, it is essential to consider several factors, including, Learning the history of smartwatches can help you understand smart wearables and how they have progressed over time.

When you say a smartwatch, you can tell that it is a timepiece with additional features, so it is safe to say that the Calcron is one of the first smartwatches because it's introduced

in 1975. It is one of the first calculator smartwatches that had a nine-digit display. It has helped people back then to perform basic calculations without the need to use a separate calculator. In the early 1980s, Seiko has also introduced other models with computing capabilities. As time passed by, more watch companies have joined the bandwagon of producing computing smartwatches. In the history of smartwatches, other watches include the Data-2000 (1983), which could store two memos of up to 1,000 characters each. These were fit into a keyboard where the user has entered their entered information. Another timepiece was the RC-1000 (1984) which was connected to a personal computer. There was also the Receptor Message Watch (1990), which has received messages via FM radio signals.

In the 1990s, Datalink (1994) collaborated with Timex and Microsoft, where information was entered on personal computers. It was transmitted to the watch wirelessly via light pulses. Another fascinating timepiece back then was the Seiko's Ruputer (1998), a personal computer fitted into a watch. In this device, data was entered through buttons or a joystick. Another one was Samsung's SPH-WP10 (1999) which became the first watch phone.

1.3 SMARTWATCH APPLICATIONS

Despite the early stages of smartwatch ownership there are already several applications available which are aimed explicitly at learners or can be used for learning purposes. One of the first areas which developers have address is language learning – unsurprising as this is one of the subject areas where mobile learning (here more specifically known as mobile-assisted language learning or MALL) is most advanced. One of the first Android Wear apps to be released was for Duolingo, a smartphone-based language learning app offering courses in several languages including German, Spanish and Russian. Rather than mirror the entire smartphone app on the smaller screen of a smartwatch, this app focuses on providing a flashcard-style system for learning and testing vocabulary. Although the Peeble smartwatches were originally only available with a monochrome screen and with lower technical specifications than other systems, developers here have also found creative ways to implement mobile learning. The developer has programmed several watch faces which show vocabulary from a defined-set at a predetermined interval. This means that along with showing the date and time, the screen also displays

a word from your chosen language collection. By pressing a button on the watch you can then see a definition of the word or a translation in your native language. The Babel app was the first language learning system to launch an app for the Apple Watch. The app promises to offer contextual vocabulary learning by recognizing where the user currently is and, for example, offering typical vocabulary for ordering a drink when the user is sitting in a café. For teachers smartwatches offer several possibilities to assist in the classroom. Timer apps for monitoring speeches or presentations are available for all platforms as well as the possibility to remotely control presentations.

1.4 INDUSTRY PROFILE

A smartwatch is a digital device worn on the wrist to give atomic clock accuracy. It is connected to a smartphone to provide notifications of e-mails, messages, and incoming calls. It includes several apps that offer additional functionality, such as displaying weather information, and maps, and listing stock prices. It can also be used to make phone calls and send and receive text messages. As it has pedometers and heart rate monitors to help users track their health, its demand is escalating around the world. The rising adoption of smart and connected devices represents one of the key factors stimulating the market growth. In addition, the increasing penetration of the internet and boosting sales of smartphones are influencing the market positively. Moreover, the rising health consciousness among individuals due to the growing prevalence of chronic and lifestyle diseases is catalyzing the demand for wireless fitness devices like smartwatches across the globe. Smartwatches are connected to fitness apps to provide insightful information about the overall health of individuals and track their nutritional intake. Apart from this, the integration of artificial intelligence (AI) ensures smart diagnostics and monitoring of patient health. The increasing participation of individuals in sports and other physical activities, in confluence with the emerging trend of adventure recreation and wellness tourism, is also contributing to market growth. Furthermore, due to the mass outbreak of coronavirus disease (COVID-19), health institutes across the globe are studying the significance of smartwatches for monitoring patients. For instance, Karolinska Institute (KI), a Sweden-based medical

university, initiated research on the use of smartwatch electrocardiogram (ECG) tests to identify individuals with Long COVID.

1.5 COMPANY PROFILE

1.5.1 APPLE SMARTWATCH:

Apple Watch is a line of smartwatches produced by Apple Inc. It incorporates fitness tracking, health-oriented capabilities, and wireless telecommunication, and integrates with iOS and other Apple products and services. The Apple Watch was released in April 2015 and quickly became the best-selling wearable device: 4.2 million were sold in the second quarter of fiscal 2015, and more than 100 million people were estimated to use an Apple Watch as of December 2020. Apple has introduced new generations of the Apple Watch with improved internal components each September each labeled by Apple as a 'Series', with certain exceptions.

Each Series has been initially sold in multiple variants defined by the watch casing's material, color, and size (except for the budget watches Series 1 and SE, available only in aluminum), and beginning with Series 3, by the option in the aluminum variants for LTE cellular connectivity, which comes standard with the other materials. The band included with the watch can be selected from multiple options from Apple, and watch variants in aluminum co-branded with Nike and in stainless steel co-branded with Hermès are also offered, which include exclusive bands, colors, and digital watch faces carrying those companies' brandings.

The Apple Watch operates primarily in conjunction with the user's iPhone for functions such as configuring the watch and syncing data with iPhone apps, but can separately connect to a Wi-Fi network for some data-reliant purposes, including basic communications and audio streaming. LTE-equipped models can connect to a mobile network, including for calling, texting, and installed mobile app data use, substantially reducing the need for an iPhone after initial setup. Although the paired iPhone need not be near the watch, to make a call with the watch, the paired iPhone must still be powered on and connected to a cellular network. The oldest iPhone model that is compatible with any given Apple Watch depends on the version of system software installed on each

device. As of September 2021, new Apple Watches come with watchOS 8 preinstalled and require an iPhone running iOS 15, which is available for the iPhone 6S and later.

1.5.2 FITBIT SMARTWATCH:

Fitbit (stylized as fitbit) is an American consumer electronics and fitness company. It produces wireless-enabled wearable technology, physical fitness monitors and activity trackers such as smartwatches, pedometers and monitors for heart rate, quality of sleep and stairs climbed as well as related software. The company was acquired by Alphabet, Inc. in 2021.

In 2019, Fitbit was the fifth largest wearable technology company in shipments. The company has sold more than 120 million devices and has 29 million users.^[5] Products are sold in 39,000 retail stores and in over 100 countries.

The company was founded as Healthy Metrics Research, Inc. in San Francisco, California on March 26, 2007 by James Park (CEO) and Eric Friedman (CTO). In October 2007, it changed its name to Fitbit, Inc.

In January 2015, the company successfully defended against a trademark lawsuit from Fitbug. On March 5, 2015, Fitbit acquired fitness coaching app developer Fitstar for \$17.8 million. In June 2015, the company became a public company via an initial public offering, raising \$732 million.

In May 2016, Fitbit acquired a wearable payment platform from smart credit card company Coin. In October 2016, CEO James Park announced that the company was undergoing a major transformation from what he called a "consumer electronics company" to a "digital healthcare company." On December 6, 2016, Fitbit acquired assets from Pebble for \$23 million.

On January 10, 2017, Fitbit acquired Romania-based smartwatch startup Vector Watch SRL.

On February 13, 2018, Fitbit acquired Twine Health. In February 2018, Fitbit announced a partnership with Adidas to release an Adidas-branded Fitbit Ionic; it was released on March 19, 2018. In August 2018, Blue Cross Blue Shield Association announced a

partnership with Fitbit in which BCBS will include Fitbit's wearables and fitness trackers in its Blue365 program. In January 2021, Fitbit was acquired by Google and absorbed into its hardware division. The acquisition was scrutinized by regulators concerned over Google's access to personal data in both the United States and Europe.

1.5.3 GARMIN SMARTWATCH:

Garmin Ltd. (shortened to Garmin, stylized as GARMIN, and formerly known as ProNav) is an Swiss-domiciled multinational technology company founded in 1989 by Gary Burrell and Min Kao in Lenexa, Kansas, United States, with headquarters in Olathe, Kansas. Since 2010, the company is incorporated in Schaffhausen, Switzerland.

The company specializes in GPS technology for automotive, aviation, marine, outdoor, and sport activities. Due to their development in wearable technology, they have also been competing with activity tracker and smartwatch consumer developers such as Fitbit and Apple.

In 1983, Gary Burrell recruited Min H. Kao from the defense contractor Magnavox while working for the former King Radio. They founded Garmin in 1989 in Lenexa, Kansas,^[2] as "ProNav". ProNav's first product was a GPS unit which sold for US\$2,500. The company was later renamed "Garmin", a portmanteau of its two founders, Gary Burrell and Min H. Kao. In 1991, the U.S. Army became their first customer.

By 1995, Garmin's sales had reached \$105 million, and it had achieved a profit of \$23 million. By 1999, sales had reached \$233 million and a profit of \$64 million. Garmin reported a 2006 total revenue of \$1.77 billion, up 73% from \$1.03 billion in 2005.

By 2000 Garmin had sold three million GPS devices, and was producing 50 different models. Its products were sold in 100 countries and carried by 2,500 independent distributors. As of August 22, 2000, the company held 35 patents on GPS technology. By the end of June 2000, the company employed 1,205 people: 541 in the United States, 635 in Taiwan, and 29 in the United Kingdom. In April 2018, Garmin launched Connect IQ 3.0 along with new apps—MySwim Pro, Yelp, Trailforks and iHeartRadio. In May 2018, Garmin partnered with the University of Kansas Medical Center to tackle sleep apnea and atrial fibrillation.

In August 2003, Garmin completed acquisition of UPS Aviation Technologies, Inc. based in Salem, Oregon, a subsidiary of United Parcel Service, Inc., expanding its product line of panel-mounted GPS/NAV/COMM units and integrated cockpit systems for private and commercial aircraft. The acquired company changed its name to Garmin AT, Inc. and continued operations as a wholly owned subsidiary of Garmin International, Inc.

Garmin has acquired Dynastream Innovations, EME Tec Sat SAS (EME), and Digital Cyclone. Dynastream, in Cochrane, Alberta, produces personal monitoring technology (ANT+)—such as foot pods and heart rate monitors for sports and fitness products—and also ultra-low-power and low-cost wireless connectivity devices for a wide range of applications (ANT). EME Tec Sat SAS is the distributor of Garmin's consumer products in France; following the acquisition, EME changed its name to Garmin France SAS. Digital Cyclone Inc (DCI), located in Chanhassen, Minnesota, provides mobile weather solutions for consumers, pilots, and outdoor enthusiasts. Garmin also bought Nautamatic Marine Systems, an Oregon-based company that makes autopilot systems for boats. In July 2011, Garmin finished its acquisition of the German satellite navigation company Navigon.

In 2006, Garmin introduced a new corporate logo, and opened its first retail store, located on Michigan Avenue in Chicago, Illinois. In 2015, Garmin acquired South Africa's iKubu Ltd. for its Backtracker on-bicycle low power radar system. In 2018, it was reported that the Garmin subsidiary Navionics had exposed hundreds of thousands of customer records, when its MongoDB database wasn't secured with a password. In 2019, Garmin acquired Tacx, a privately-held Dutch company that designs and manufacturers indoor bike trainers, tools and accessories, as well as indoor training software and applications. In 2021 Garmin acquired AeroData, a Scottsdale AZ based company that provides aircraft performance software for over 135 airlines worldwide. The company will continue to operate under the AeroData brand.

1.6 NEED FOR THE STUDY

- ❖ Primary need of study of smart watches is the basic tool for the advanced science and technology.

- ❖ This list of best smartwatches for college students will guarantee to help you. It has modern features and additional advantages that will add value to your life and day to day routine.
- ❖ We also need to study about the effective use of this gadget for human well-being in their daily life and also in their health care.

1.7 OBJECTIVES OF THE STUDY

- ❖ To find which brand of smartwatch has highest usage.
- ❖ To know the perception of students in smart watches.
- ❖ To find which specification in smartwatch has highest usage.

CHAPTER 2

REVIEW OF LITERATURE

Shweta A. Panchbudhe, Nandkishor Bankar, Sanika Kalambe, Ujwalla Gawande, 2021, It is based on a Questionnaire Study about the Experiences of Smart Watches of Different Brands. Smart watches are becoming increasingly common because they allow users to access and communicate online information while on the move. Smart watches also offer the user spatial and temporal information and show a map on the screen. It's a modern device that came out a few years ago. A smart watch is a modern technology that incorporates smart phone functionality with continuous data monitoring to encourage fitness, such as step tracking, heart rate monitoring, energy consumption, and physical activity levels. It also provides users with input to help them control their health. The study's findings indicate that smart watches are becoming more common and useful for people in their daily lives, as they allow users to access information about their environment and body-related conditions.

Mark M. Afrouz and Tobias Wahl, 2019, The rapid growth and increased competition in today's technology industry leads to a growth in consumers' expectations on new presented products. The results of this study provide empirical evidence that the attitude towards using was the strongest predictor for the intention to purchase smartwatches. The outcomes further show that the attitude is influenced by the two hedonic factors perceived enjoyment and design aesthetics as well as by the utilitarian factor perceived usefulness. Out of those three factors perceived enjoyment was found to exert the strongest influence on attitude. Contrary to previous research, the results of this study could not reveal a significant influence of subjective norms on purchase intention. However, beside the attitude, perceived behavioral control was also found to influence purchase intention. The findings of this research allowed to draw a variety of theoretical and managerial implications as well as to develop possible research opportunities for future studies.

APURVA ADAPA, 2016, This study aims to examine the factors and issues in adoption of smart wearable devices. Wearable devices have many functions to offer which make

them very useful in our daily lives. However, factors influencing the adoption of these devices are not well understood. This research explores the inhibiting and contributing factors influencing the adoption of wearable devices by employing the laddering approach. Qualitative data were collected through in-depth interviews using the laddering technique in order to understand these factors. This research has advanced our understanding on the adoption of wearable devices and provide some insights into the key design criteria to better fit users' needs.

Stephanie H.W. Chuah Philipp A. Rauschnabel Nina Krey, 2016, Although still in the early stages of diffusion, smartwatches represent the most popular type of wearable devices. Yet, little is known about why some people are more likely to adopt smartwatches than others. To deepen the understanding of underlying factors prompting adoption behavior, the authors develop a theoretical model grounded in technology acceptance and social psychology literatures. Empirical results reveal perceived usefulness and visibility as important factors that drive adoption intention, suggesting that smartwatches represent a type of 'fashnology' (i.e., fashion and technology). The magnitude of these antecedents is influenced by an individual's perception of viewing smartwatches as a technology and/or as a fashion accessory. Theoretical and managerial implications are discussed.

Dr.P kishore kumar and V venkateshwarlu, 2014, conducted a study on customer perception and purchasing intention toward smart watches, found that consumers believe smart watches can be used to complete personal and professional tasks very conveniently. . The consumers are thinking that smart watches are reasonably price based on its feature also consumers are likely own a smart watch in future to perform variety of tasks.

Swan, 2012, Miniaturization of hardware components, the availability of low cost sensors and the existence of widespread Internet access over the last few years, have allowed wearable computing devices to become more commonplace, readily wearable and socially acceptable. This vigorous expansion of miniature computing devices has led to the concept of The Internet of Things (IOT) which can be described as a collection of

interconnected and interactive devices which are able to communicate useful real-time information between one another .

NURA MUHAMMAD BABA , AHMAD SUHAIMI BAHARUDIN , ALI SAEED ALOMARI, 2005, The rapid advancement of information and communication technologies in recent years has enabled the design and production of compact mobile devices with robust computing power. Despite these benefits and hypes, the smartwatch market has been declining continuously, and current sale estimates are still relatively low. Thus, this study aims to investigate the level of Malaysian individuals' intention to use a smartwatch and to identify and assess their impacts. Therefore, the study will assess the impacts of perceived usefulness, perceived ease of use, cost, privacy, and health risk on user's behavioural intention to use smartwatch. A total of 501 collected data was used to test the study hypotheses using structural equation modelling technique. The results revealed the high level of Malaysian individuals' intention to use a smartwatch. Moreover, perceived usefulness and perceived ease of use have a significant positive effect whereas cost, privacy, health risk did not negatively affect users' intention to use a smartwatch. The extended technology acceptance model explains 34 per cent of the variance in the intention to use a smartwatch. The findings of the study will help future researches and smartwatch developers by providing a guideline for the development of the smartwatch devices.

Zieniewicz, Johnson, Wong, & Flatt, 2002, The multi-programmable approach to augmented reality in wearable computing resulted in the United States Military using an experimental wearable computing system with their troops, which incorporated a wireless communication link and a helmet-mounted display to aid in battlefield tasks.

Man Laichung, Ka Yin Chau, 2001, examined consumers' 'Adoption of wearable healthcare technology: The role of health' and found this to be true. Healthcare wearable technology systems are supposed to have new ways to deal with health related problems, according to attributes, combining healthcare wearable technology with mobile health apps that track sports activity will inspire people to exercise more, which can help them reduce the harmful effects of their sedentary lifestyle while still preserving their health and

wellness. According to our findings, perceived usefulness and health information accuracy had a major effect on perceived usefulness, which drove adoption intention.

Andre Henriksen, Martin Haugen Mikalsen, 1998, investigated the availability of wrist-worn wearables and analyzed the availability of relevant fitness sensors. The study was designed to evaluate brand use in research projects by comparing popular brands in terms of developer access to collected health data and features to consider when deciding which brand to use in future research. , He came to the conclusion that the wearable world is constantly changing. Every year, new products and brands are introduced, offering better metrics and user experience, while other brands fade away from the consumer market for different reasons. Improvements in product quality provide new research opportunities.

Davis, 1989, PU is one of the two utilitarian antecedents influencing the attitudes towards using a technology in the original TAM. It is traditionally defined as “the extent to which a person believes that using a particular technology will enhance his/her job performance”.

CHAPTER-3

RESEARCH METHODOLOGY

3.1 RESEARCH DESIGN

3.1.1 Descriptive research design

Descriptive research is a study designed to depict the participants in an accurate way. More simply put, descriptive research is all about describing people who take part in the study.

3.2 Sources of Data

Data collection is the term used to describe a process of preparing and collecting data.

- Primary data – Questionnaire given to 106 respondents.
- Secondary data – websites and online journals, published reports & review of literature from published articles.

3.3 Structure of questionnaire

Questionnaire contains two sections. First part was designed to know the general information about respondents and the second part contains the students preference about smartwatches.

3.4 Sampling technique

3.4.1 Convenience sampling method

A convenience sample is one of the main types of non-probability sampling methods. A convenience sample is made up of people who are easy to reach.

3.5 Sample size

The sample size for this survey is 106.

3.6 Period of study

The period of study is from Jan 2022 to March 2022 which is three months of study.

3.7 Analytical tools

3.7.1 Percentage analysis

Research questions are always answered with a descriptive statistic: generally, either percentage or mean. Percentage is appropriate when it is important to know how many of the participants gave a particular answer. Generally, percentage is reported when the responses have discrete categories.

3.9 Hypothesis testing

The Spss tools used for analyzing hypothesis were Chi-square test and One—way Anova test.

H0 - Null hypothesis(there is no significant relationship between the variables)

H1 – Alternate hypothesis(there is significant relationship between the variables).

After analyzing the data, hypothesis testing is done. It will result in either accepting or rejecting the hypothesis.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

4.1 Percentage Analysis

Table 4.1.1 Gender of the respondents

Gender	No. of respondents	Percentage
Male	78	74%
Female	28	26%

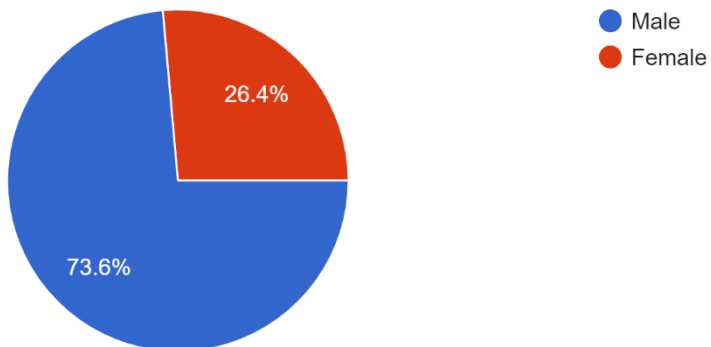


Chart 4.1.1 Gender of the respondents

INTERPRETATION

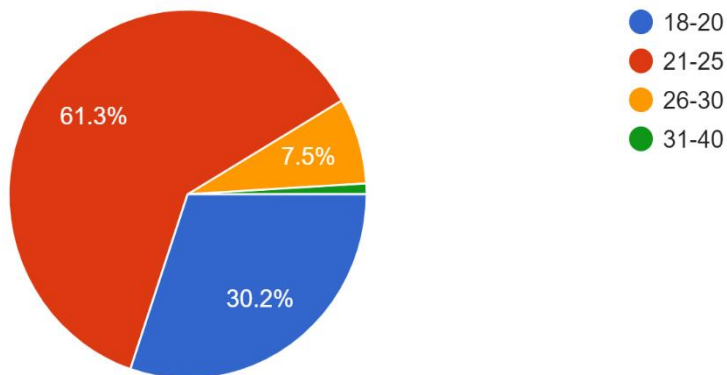
From the above table it is interpreted that majority 74% of respondents were male and 26% of respondents were female.

INFERENCE

Majority 74% of respondents were male.

Table 4.1.2 Age of the respondents

Age	No. of respondents	Percentage
18-20	32	30%
21-25	65	61%
26-30	8	8%
31-40	1	1%



INTERPRETATION

From the above table it is interpreted that 30% respondents were between the age of 18-20, 61% respondents were between the age of 21-25, 8% respondents were between the age of 26-30, 1% respondents were between the age of 31-40.

INFERENCE

Majority 61% respondents were between the age of 21-25.

Table 4.1.3 Educational Qualification of respondents

Particulars	No. of respondents	Percentage
UG	60	57%
PG	27	26%
Diploma	10	9%
Doctorate	2	2%
Other	7	6%

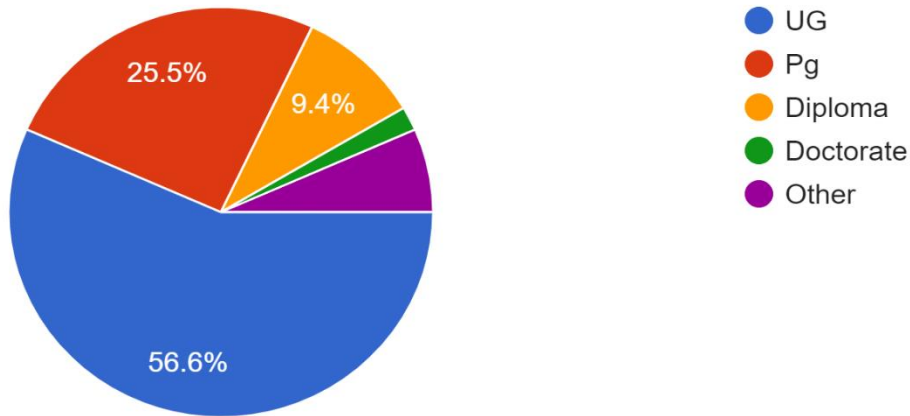


Chart 4.1.3 Educational Qualification of the respondents

INTERPRETATION

From the above table it is interpreted that 57% respondents were UG graduate, 26% respondents were PG graduate, 9% respondents were Diploma, 2% respondents were Doctorate, 6% respondents were graduates of other streams.

INFERENCE

Majority 57% respondents were UG graduate.

Table 4.1.4 MOST PREFERED SMARTWATCH BRAND

Particulars	No. of respondents	Percentage
Apple	54	51%
Garmin	6	6%
FitBit	14	13%
Others	32	30%

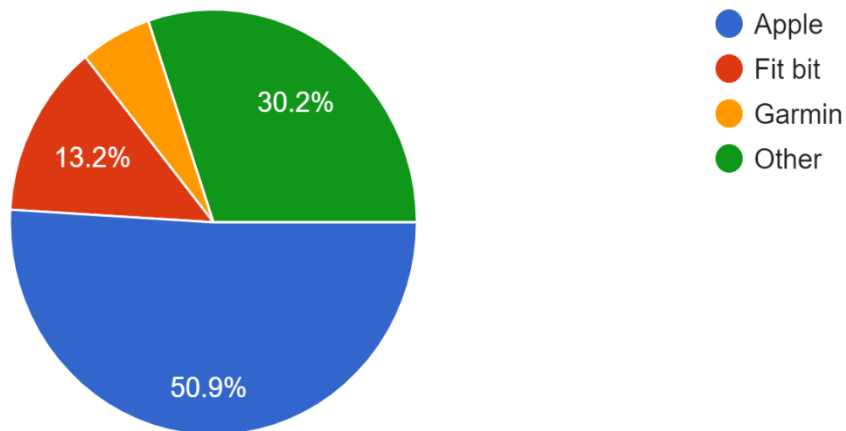


Chart 4.1.4 MOST PREFERED SMARTWATCH BRAND

INTERPRETATION

From the above table it is interpreted that 51% respondents prefers Apple, 13% respondents prefer FitBit, 6% respondents prefer Garmin, 30% respondents prefer other brands.

INFERENCE

Majority 51% respondents prefers Apple.

Table 4.1.5 MOST LIKED SPECIFICATION IN SMARTWATCHES

Particulars	No. of respondents	Percentage
Sleep tracking	12	11%
Heart monitor	26	25%
Activity Tracking	40	38%
Mobile notification	28	26%

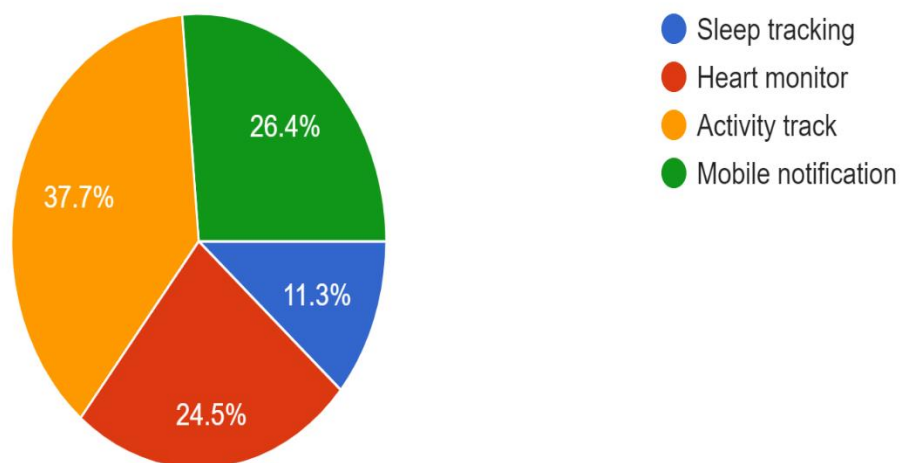


Chart 4.1.5 MOST LIKED SPECIFICATION IN SMARTWATCHES

INTERPRETATION

From the above table it is interpreted that 11% respondents likes sleep tracking, 25% respondents likes heart monitor, 38% respondents likes activity tracking, 26% respondents likes mobile notification.

INFERENCE

Majority 38% respondents likes activity tracking.

Table 4.1.6 Does the price of smartwatch is affordable

Particulars	No. of respondents	Percentage
Yes	62	58%
NO	44	42%

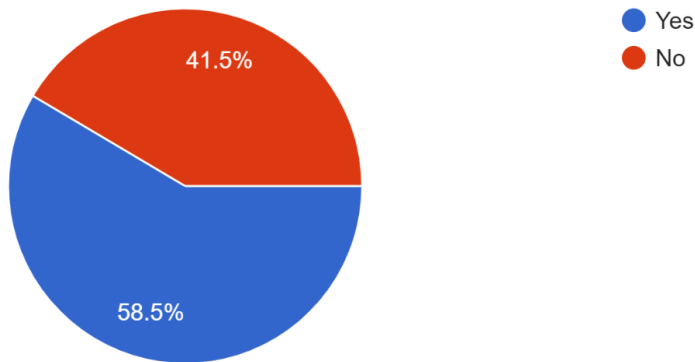


Chart 4.1.6 Does the price of smartwatch is affordable

INTERPRETATION

From the above table it is interpreted that 58% respondents says that the price of smartwatch is affordable, 42% respondents says that the price of smartwatch is not affordable

INFERENCE

Majority 58% respondents says that the price of smartwatch is affordable.

Table 4.1.7 Purpose of buying smartwatches

Particulars	No. of respondents	Percentage
Features	54	50%
Brand reputation	26	25%
others	26	25%

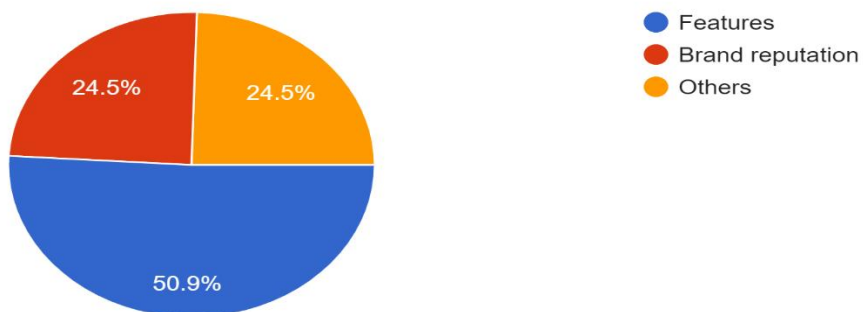


Chart 4.1.7 Purpose of buying smartwatches

INTERPRETATION

From the above table it is interpreted that 50% respondents buys it for features, 25% respondents buys it for brand reputation, 25% respondents buys it for other reasons.

INFERENCE

Majority 50% respondents buys it for features.

Table 4.1.8 Will you prefer to replace smartwatch

Particulars	No. of respondents	Percentage
Yes	27	26%
No	31	29%
May be	48	45%

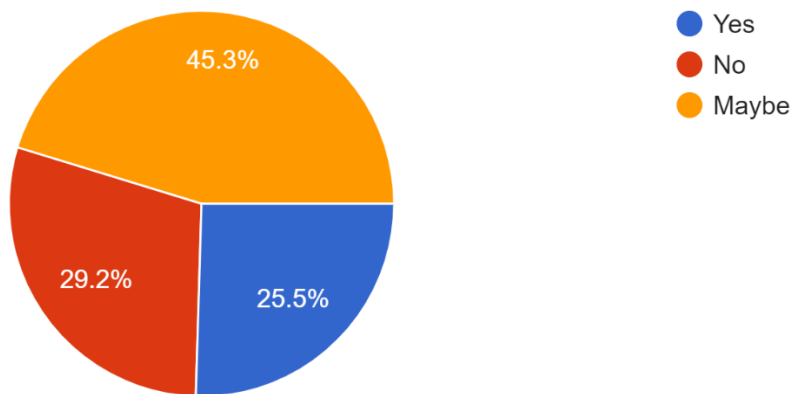


Chart 4.1.8 Will you prefer to replace smartwatch

INTERPRETATION

From the above table it is interpreted that 26% respondents will prefer to replace smartwatches, 29% respondents will not prefer to replace smartwatches, 45% respondents may be prefer to replace smartwatches.

INFERENCE

Majority 45% respondents may be prefer to replace smartwatches.

Table 4.1.9 Preference of information smartwatch to tell

Particulars	No. of respondents	Percentage
Health based info	50	47%
Activity or tasks	32	30%
Email & communication	24	23%

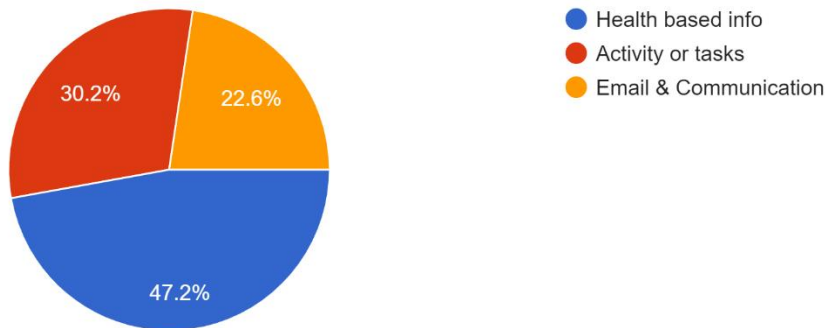


Chart 4.1.9 Preference of information smartwatch to tell

INTERPRETATION

From the above table it is interpreted that 47% respondents prefer health based info, 30% respondents prefer activity or tasks, 23% respondents prefer email & communication.

INFERENCE

Majority 47% respondents prefer health based info.

Table 4.1.10 Ratings for health & wellness features of smartwatches

Particulars	Heart rate		pedometer		Blood pressure monitor		Sleep monitor	
	No	%	No	%	No	%	No	%
1	17	16%	14	14%	20	19%	17	16%
2	13	12%	31	29%	17	16%	16	15%
3	32	30%	30	28%	29	27%	31	29%
4	24	23%	17	16%	24	23%	24	23%
5	20	19%	14	13%	16	15%	18	17%

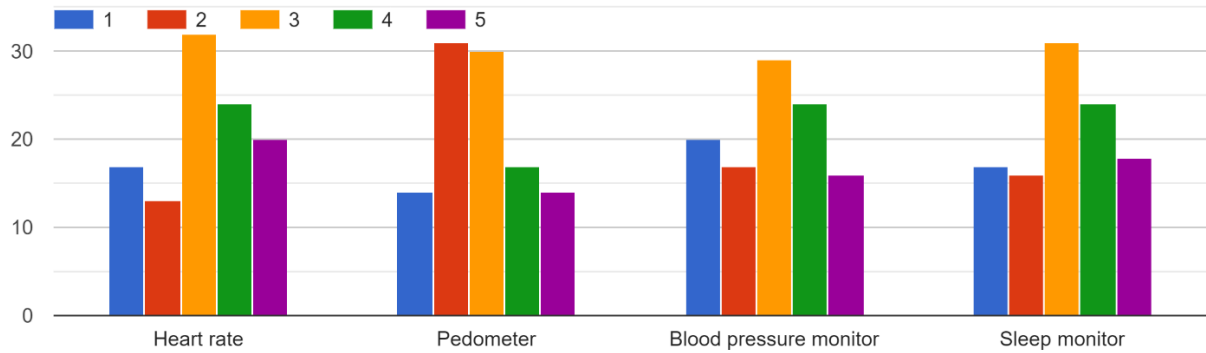


Chart 4.1.10 Ratings for health & wellness features of smartwatches

INTERPRETATION

- From the above table it is interpreted that 16% respondents gave 1 rating for heart rate specification, 12% respondents gave 2 rating for heart rate specification, 30% respondents gave 3 rating for heart rate specification, 23% respondents gave 4 rating for heart rate specification, 19% respondents gave 5 rating for heart rate specification.
- 14% respondents gave 1 rating for pedometer, 29% respondents gave 2 rating for pedometer, 28% respondents gave 3 rating for pedometer, 16% respondents gave 4 rating for pedometer, 13% respondents gave 5 rating for pedometer.
- 19% respondents gave 1 rating for blood pressure monitor, 16% respondents gave 2 rating for blood pressure monitor, 27% respondents gave 3 rating for blood pressure monitor, 23% respondents gave 4 rating for blood pressure monitor, 15% respondents gave 5 rating for blood pressure monitor.
- 16% respondents gave 1 rating for sleep monitor, 15% respondents gave 2 rating for sleep monitor, 29% respondents gave 3 rating for sleep monitor, 23% respondents gave 4 rating for sleep monitor, 17% respondents gave 5 rating for sleep monitor.

INFERENCE

- Majority 30% respondents gave 3 rating for heart rate specification.
- Majority 29% respondents gave 2 rating for pedometer.

- Majority 27% respondents gave 3 rating for blood pressure monitor.
- Majority 29% respondents gave 3 rating for sleep monitor.

Table 4.1.11 Ratings for battery performance of smartwatches

Particulars	No. of respondents	Percentage
1	7	7%
2	7	7%
3	22	21%
4	22	21%
5	48	44%

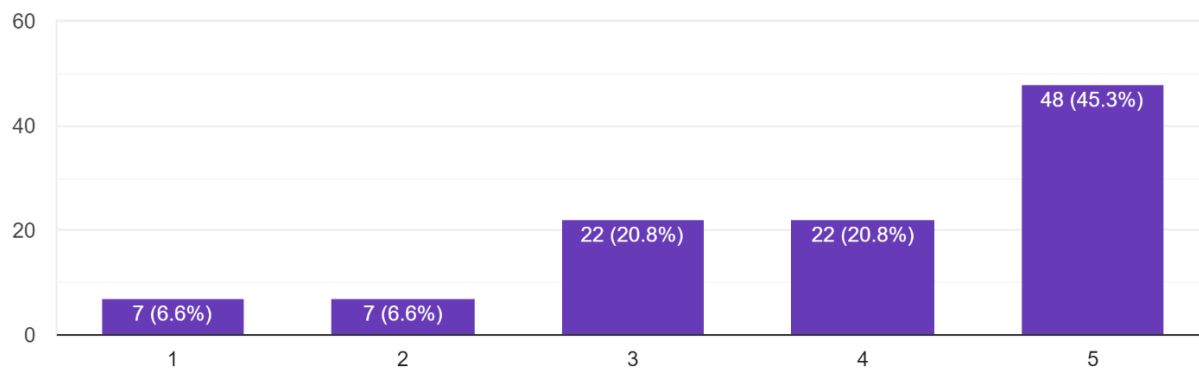


Chart 4.1.11 Ratings for battery performance of smartwatches

INTERPRETATION

From the above table it is interpreted that 7% respondents gave 1 rating for battery performance, 7% respondents gave 2 rating for battery performance, 21% respondents gave 3 rating for battery performance, 21% respondents gave 4 rating for battery performance, 44% respondents gave 5 rating for battery performance.

INFERENCE

Majority 44% respondents gave 5 rating for battery performance.

Table 4.1.12 Disadvantages of smartwatches

Particulars	No. of respondents	Percentage
Price	60	57%
Size	14	13%
Privacy concerns	16	15%
Others	16	15%

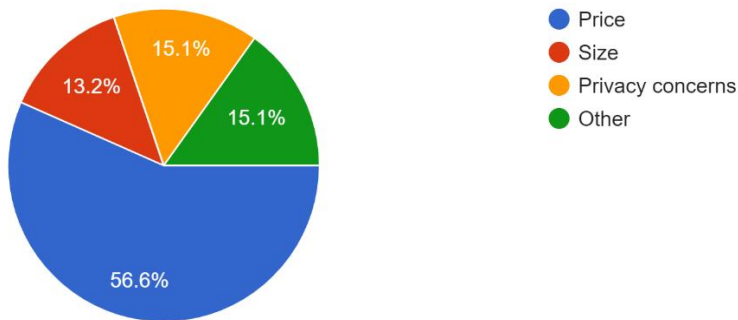


Chart 4.1.12 Disadvantages of smartwatches

INTERPRETATION

From the above table it is interpreted that 57% respondents says that price is the disadvantage, 13% respondents says that size is the disadvantage, 15% respondents says that privacy concern is the disadvantage, 15% respondents says that there are other disadvantages.

INFERENCE

Majority 57% respondents says that price is the disadvantage.

Table 4.1.13 Is the features are easily understandable

Particulars	No. of respondents	Percentage
Yes	62	58%
No	20	19%
Some are difficult	24	23%

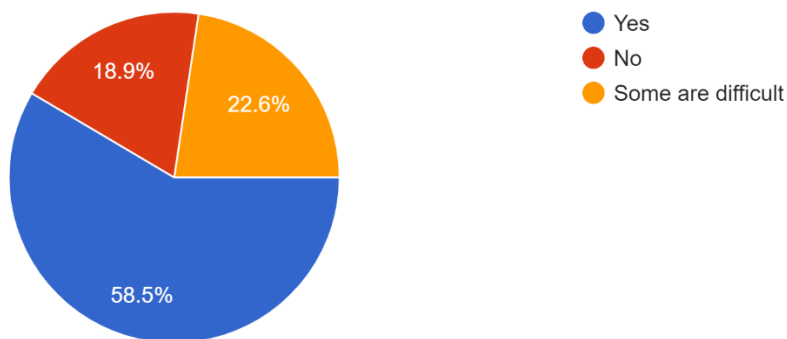


Chart 4.1.13 Is the features are easily understandable

INTERPRETATION

From the above table it is interpreted that 58% respondents says that features are easily understandable, 19% respondents says that the features are not easily understandable, 23% respondents says that some features are difficult to understand.

INFERENCE

Majority 58% respondents says that features are easily understandable.

Table 4.1.14 Do you think smartwatches give accurate data on health and wellness

Particulars	No. of respondents	Percentage
Yes	44	41%
No	24	23%
May be	38	36%

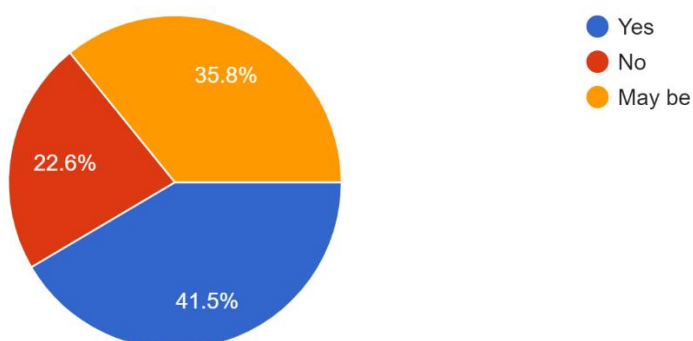


Chart 4.1.14 Do you think smartwatches give accurate data on health and wellness

INTERPRETATION

From the above table it is interpreted that 41% respondents thinks smartwatches give accurate data on health and wellness, 23% respondents thinks smartwatches does not give accurate data on health and wellness, 36% respondents thinks smartwatches may be give accurate data on health and wellness.

INFERENCE

Majority 41% respondents thinks smartwatches give accurate data on health and wellness.

Table 4.1.15 Is the smartwatch worth for its price

Particulars	No. of respondents	Percentage
Yes	48	45%
No	32	30%
May be	26	25%

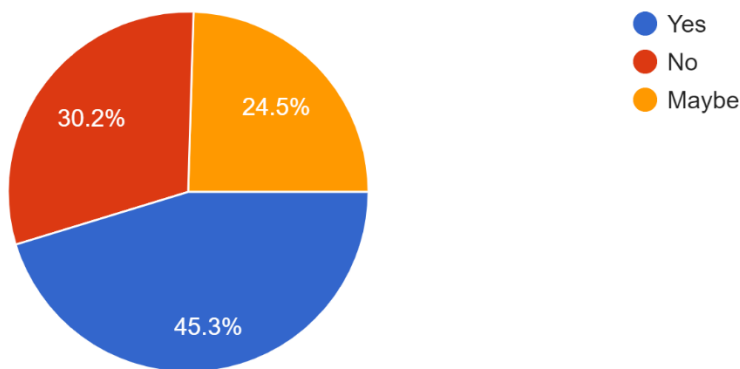


Chart 4.1.15 Is the smartwatch worth for its price

INTERPRETATION

From the above table it is interpreted that 45% respondents says smartwatches are worth for its price, 30% respondents says smartwatches are not worth for its price, 25% respondents says smartwatches may be worth for its price.

INFERENCE

Majority 45% respondents says smartwatches are worth for its price.

Table 4.1.16 Does smartwatch helps you in your studies

Particulars	No. of respondents	Percentage
Yes	44	41%
No	37	35%
May be	25	24%

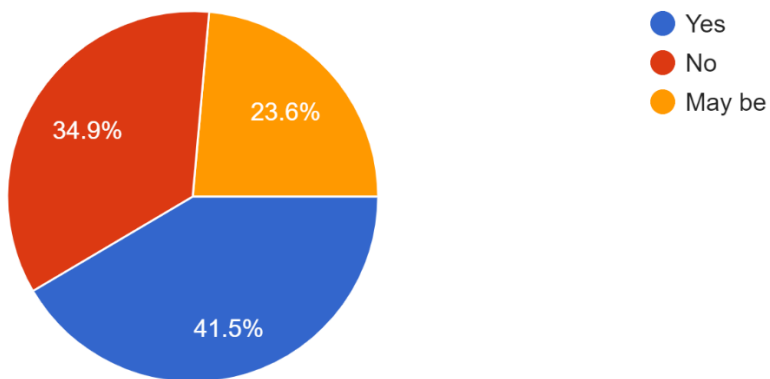


Chart 4.1.16 Does smartwatch helps you in your studies

INTERPRETATION

From the above table it is interpreted that 41% respondents says that smartwatches helps them in studies, 35% respondents says that smartwatches does not helps them in studies, 24% respondents says that smartwatches may be helps them in studies.

INFERENCE

Majority 41% respondents says that smartwatches helps them in studies.

Table 4.1.17 Satisfaction level for the design of the smartwatch

Particulars	No. of respondents	Percentage
Highly unsatisfied	7	7%
Unsatisfied	3	3%
Neutral	18	17%
Satisfied	31	29%
Highly satisfied	47	44%

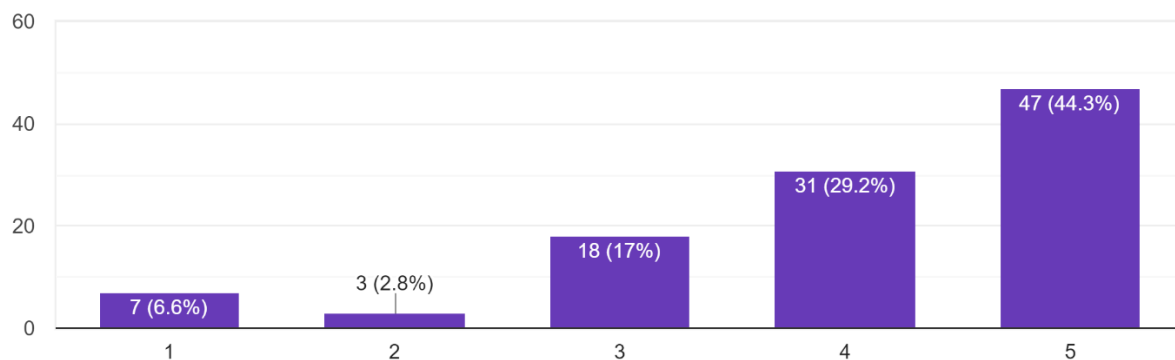


Chart 4.1.17 Satisfaction level for the design of the smartwatch

INTERPRETATION

From the above table it is interpreted that 7% respondents were highly unsatisfied for the design of the smartwatches, 3% respondents were unsatisfied for the design of the smartwatches, 17% respondents were neutral for the design of the smartwatches, 29% respondents were satisfied for the design of the smartwatches, 44% respondents were highly satisfied for the design of the smartwatches.

INFERENCE

Majority 44% respondents were highly satisfied for the design of the smartwatches.

Table 4.1.18 Satisfaction level for the availability of apps in smartwatches

Particulars	No. of respondents	Percentage
Highly unsatisfied	8	7%
Unsatisfied	5	5%
Neutral	18	17%
Satisfied	33	31%
Highly satisfied	42	40%

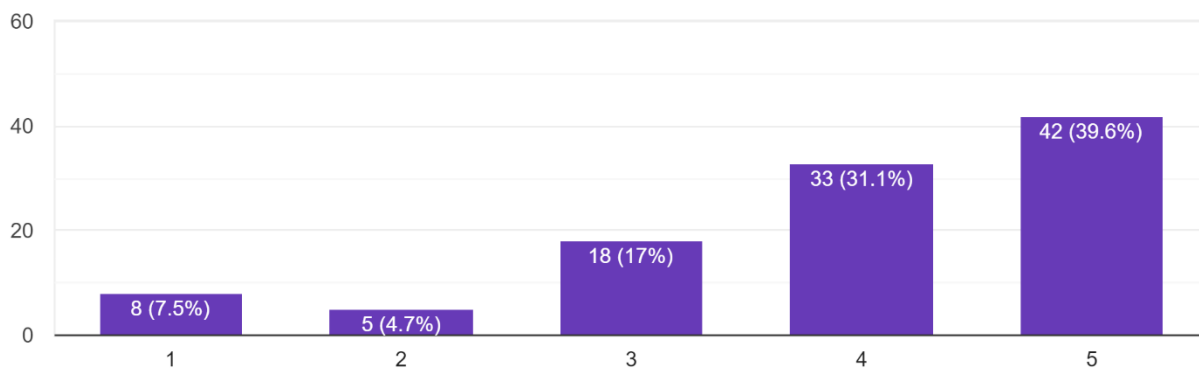


Chart 4.1.18 Satisfaction level for the availability of apps in smartwatches

INTERPRETATION

From the above table it is interpreted that 7% respondents were highly unsatisfied for the availability of apps in smartwatches, 5% respondents were unsatisfied for the availability of apps in smartwatches, 17% respondents were neutral for the availability of apps in smartwatches, 31% respondents were satisfied for the availability of apps in smartwatches, 40% respondents were highly satisfied for the availability of apps in smartwatches.

INFERENCE

Majority 40% respondents were highly satisfied for the availability of apps in smartwatches.

Table 4.1.19 Specification you like to be inserted in smartwatches

Particulars	No. of respondents	Percentage
Large screen	15	14%
Waterproof	62	59%
Longer battery life	29	27%

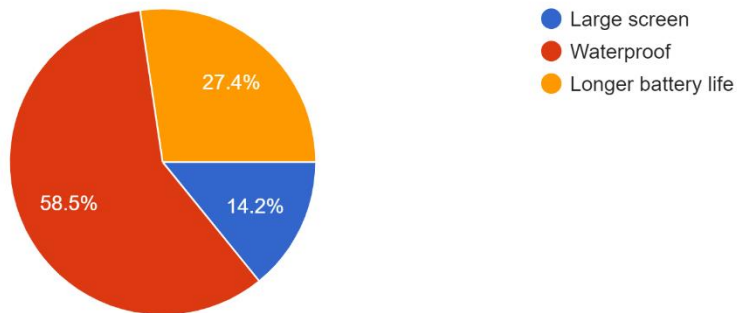


Chart 4.1.19 Specification you like to be inserted in smartwatches

INTERPRETATION

From the above table it is interpreted that 14% respondents like large screen to be inserted, 59% respondents like waterproof to be inserted, 27% respondents like longer battery life to be inserted.

INFERENCE

Majority 59% respondents like waterproof to be inserted.

Table 4.1.20 Satisfaction level for the speakers in the smartwatches

Particulars	No. of respondents	Percentage
Highly unsatisfied	4	4%
Unsatisfied	14	13%
Neutral	22	21%
Satisfied	28	26%
Highly satisfied	38	36%

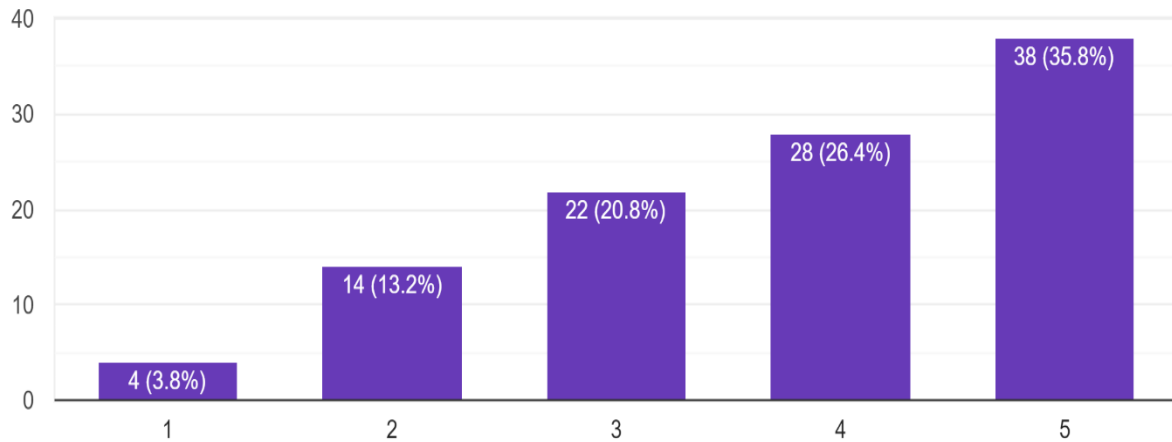


Chart 4.1.20 Satisfaction level for the speakers in the smartwatches

INTERPRETATION

From the above table it is interpreted that 4% respondents were highly unsatisfied by the speakers in smartwatches, 13% respondents were unsatisfied by the speakers in smartwatches, 21% respondents were neutral by the speakers in smartwatches, 26% respondents were satisfied by the speakers in smartwatches, 36% respondents were highly satisfied by the speakers in smartwatches.

INFERENCE

Majority 36% respondents were highly satisfied by the speakers in smartwatches.

Table 4.1.21 Overall satisfaction for the smartwatches

Particulars	No. of respondents	Percentage
Highly unsatisfied	3	3%
Unsatisfied	9	8%
Neutral	15	14%
Satisfied	36	34%
Highly satisfied	43	41%

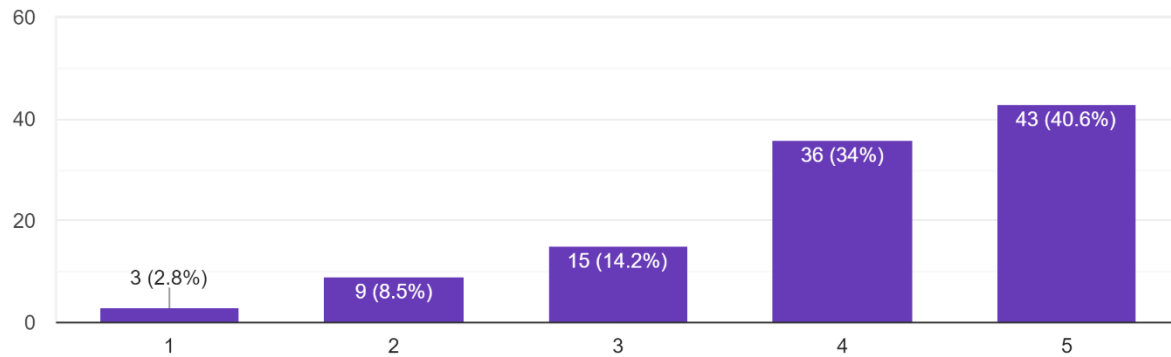


Chart 4.1.21 Overall satisfaction for the smartwatches

INTERPRETATION

From the above table it is interpreted that 3% respondents were highly unsatisfied by the smartwatches, 8% respondents were unsatisfied by the smartwatches, 14% respondents were neutral by the smartwatches, 34% respondents were satisfied by the smartwatches, 41% respondents were highly satisfied by the smartwatches.

INFERENCE

Majority 41% respondents were highly satisfied by the smartwatches.

4.2 ONE-WAY ANOVA TEST

Null hypothesis(H0): There is no significance difference between overall satisfaction and affordability of smartwatches.

Alternate hypothesis(H1) : There is a significance difference between overall satisfaction and affordability of smartwatches.

DESCRIPTIVES								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
5	43	2.033	0.182	0.023	1.986	2.081	2.00	3.00
4	36	2.193	0.476	0.050	2.092	2.294	2.00	4.00
3	15	2.620	0.490	0.069	2.480	2.759	2.00	3.00
2	9	2.500	1.000	0.500	0.908	4.091	2.00	4.00
1	3							
Total	106	2.258	0.482	0.034	2.191	2.325	2.00	4.00
Overall satisfaction*affordability of smartwatches								
		Sum of Squares	df	Mean Square	F	Sig.		
Between Groups		10.119	3	3.373	18.241	0.043		
Within Groups		36.428	197	0.185				
Total		46.547	200					

INFERENCE

Since p value 0.043 is less than 0.05, null hypothesis is rejected and alternate hypothesis is accepted. Hence, There is a significance difference between overall satisfaction and affordability of smartwatches.

4.3 CHI-SQUARE TEST

Null hypothesis(H0): There is no significant association between education and their perception of smartwatch usefulness in studies.

Alternate hypothesis(H1): There is a significant association between education and their perception of smartwatch usefulness in studies.

Educational qualification*usefulness of smartwatches in studies						
	Usefulness of smartwatches in studies					Total
			yes	no	May be	
Educational qualification	UG	Count	11	39	25	77
		Expected Count	18.0	37.5	19.9	77.0
	PG	Count	13	24	14	52
		Expected Count	12.2	25.4	13.5	52.0
	DIPLOMO	Count	11	23	11	46
		Expected Count	10.8	22.4	11.9	46.0
	OTHERS	Count	12	12	2	26
		Expected Count	6.1	12.7	6.7	26.0
Total		Count	47	98	52	201
		Expected Count	47.0	98.0	52.0	201.0

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.110 ^a	9	0.118
Likelihood Ratio	14.955	9	0.092
Linear-by-Linear Association	10.876	1	0.001
N of Valid Cases	201		

INFERENCE

Since p value 0.118 is greater than 0.05, Null hypothesis is accepted. Hence, There is no significant association between education and their perception of smartwatch usefulness in studies.

CHAPTER 5

FINDINGS, SUGGESTIONS AND CONCLUSION

5.1 FINDINGS

- ❖ Majority 74% of respondents were male.
- ❖ Majority 61% respondents were between the age of 21-25.
- ❖ Majority 57% respondents were UG graduate.
- ❖ Majority 51% respondents prefers Apple.
- ❖ Majority 38% respondents likes activity tracking.
- ❖ Majority 58% respondents says that the price of smartwatch is affordable.
- ❖ Majority 50% respondents buys it for features.
- ❖ Majority 45% respondents may be prefer to replace smartwatches.
- ❖ Majority 47% respondents prefer health based info.
- ❖ Majority 30% respondents gave 3 rating for heart rate specification.
- ❖ Majority 29% respondents gave 2 rating for pedometer.
- ❖ Majority 27% respondents gave 3 rating for blood pressure monitor.
- ❖ Majority 29% respondents gave 3 rating for sleep monitor.
- ❖ Majority 44% respondents gave 5 rating for battery performance.
- ❖ Majority 57% respondents says that price is the disadvantage.
- ❖ Majority 58% respondents says that features are easily understandable.
- ❖ Majority 41% respondents thinks smartwatches give accurate data on health and wellness.
- ❖ Majority 45% respondents says smartwatches are worth for its price.
- ❖ Majority 41% respondents says that smartwatches helps them in studies.
- ❖ Majority 44% respondents were highly satisfied for the design of the smartwatches.
- ❖ Majority 40% respondents were highly satisfied for the availability of apps in smartwatches.
- ❖ Majority 59% respondents likes waterproof to be inserted.
- ❖ Majority 36% respondents were highly satisfied by the speakers in smartwatches.
- ❖ Majority 41% respondents were highly satisfied by the smartwatches.

5.2 SUGGESTIONS

- ❖ Many respondents suggested that battery life of the smart watch must be improved.
- ❖ Some of the devices were stop responding in sometimes this problem must be sorted out.
- ❖ Many respondents suggested that waterproof tech also must be improved.
- ❖ Display these watches are not comfortable for the vision so the display must be altered with other type of screen.
- ❖ Body built is not so much strong so it is very danger to use smartwatch while playing games, so the body must be built strong.

5.3 CONCLUSION

The study concluded that many students were highly interested to buy smartwatches. The study further touches on their efficient management of power, easy user interface and the minimal display. As a result of that many companies were started to infuse more technology in smartwatches. The wearable world is constantly changing. Every year, new products and brands are introduced, offering better metrics and user experience, while other brands fade away from the consumer market for different reasons. Improvements in product quality provide new research opportunities. This project set out to determine if the smart watch would be useful to university students. A review of literature was first conducted where wearable computing was discussed further, specifically in the area of smart watches where their known advantages and disadvantages were acknowledged. Previous work done on application development for smart watches and other mobile devices such as smart phones was also investigated. The application requirements of users found in previous usability studies were documented, where it was found that users want similar functionalities from different devices. Possible future smart watch advancements based on current research were also discussed.

REFERENCES

- ❖ Park, E., et al., Understanding the emergence of wearable devices as next-generation tools for health communication. *Information Technology & People*, 2016. 29(4): p. 717-732.
- ❖ Chang, H.S., S.C. Lee, and Y.G. Ji, Wearable device adoption model with TAM and TTF. *International Journal of Mobile Communications*, 2016. 14(5): p. 518-537.
- ❖ Koo, S.H., Consumer Differences in the United States and India on Wearable Trackers. *Family and Consumer Sciences Research Journal*, 2017. 46(1): p. 40-56.
- ❖ Page, T., A forecast of the adoption of wearable technology. 2015.
- ❖ Sharifi, S.S. and M. Palmeira, Customers' reactions to technological products: The impact of implicit theories of intelligence. *Computers in Human Behavior*, 2017. 77(Supplement C): p. 309-316.
- ❖ Adapa, A., et al., Factors influencing the adoption of smart wearable devices. *International Journal of Human–Computer Interaction*, 2018: p. 1-11.
- ❖ Rajanen, D. and M. Weng. Digitization for fun or reward?: a study of acceptance of wearable devices for personal healthcare. in *Proceedings of the 21st International Academic Mindtrek Conference*. 2017. ACM. *Journal of Theoretical and Applied Information Technology* 30th September 2019. Vol.97. No 18 © 2005 – ongoing JATIT & LLS ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195 4748
- ❖ Sultan, N., Reflective thoughts on the potential and challenges of wearable technology for healthcare provision and medical education. *International Journal of Information Management*, 2015. 35(5): p. 521-526.
- ❖ Wright, R. and L. Keith, Wearable technology: If the tech fits, wear it. *Journal of Electronic Resources in Medical Libraries*, 2014. 11(4): p. 204-216.
- ❖ Jeong, S.C., et al., Domain-specific innovativeness and new product adoption: A case of wearable devices. *Telematics and Informatics*, 2016.

- ❖ Cecchinato, M.E., A.L. Cox, and J. Bird. Smartwatches: the Good, the Bad and the Ugly? in Proceedings of the 33rd Annual ACM Conference extended abstracts on human factors in computing systems. 2015. ACM.
- ❖ Choi, J. and S. Kim, Is the smartwatch an IT product or a fashion product? A study on factors affecting the intention to use smartwatches. Computers in Human Behavior, 2016. 63: p. 777-786.
- ❖ IDC, Smartwatch Market Declines 51.6% in the Third Quarter as Platforms and Vendors Realign, IDC Finds. 2016, IDC.
- ❖ Ha, T., et al., Examining user perceptions of smartwatch through dynamic topic modeling. Telematics and Informatics, 2017. 34(7): p. 1262-1273.
- ❖ Chuah, S.H.-W., et al., Wearable technologies: The role of usefulness and visibility in smartwatch adoption. Computers in Human Behavior, 2016. 65: p. 276-284.

BIBLIOGRAPHY(QUESTIONNAIRE)

1. Name -

2. Email -

3. Gender

- ☐ Male
- ☐ Female

4. Age

- ☐ 18-20
- ☐ 21-25
- ☐ 26-30
- ☐ 31-40

5. Qualification

- ☐ UG
- ☐ Pg
- ☐ Diploma
- ☐ Doctorate
- ☐ Other

6. Which brand of smart watch do you prefer

- ☐ Apple
- ☐ Fit bit
- ☐ Garmin
- ☐ Other

7. Which specifications in fitness smartwatch you like more

- ☐ Sleep tracking
- ☐ Heart monitor
- ☐ Activity track
- ☐ Mobile notification

8. Does the price of the smartwatch is affordable

- ☐ Yes
- ☐ No

9. For which purpose do you buy smartwatch

- ☐ Features
- ☐ Brand reputation
- ☐ Others

10. Will you prefer to replace your smartwatch

- ☐ Yes
- ☐ No
- ☐ Maybe

11. What information do you prefer your smartwatch to tell you

- ☐ Health based info
- ☐ Activity or tasks
- ☐ Email & Communication

12. Give your ratings for health and wellness features of smartwatches

1 2 3 4 5

Heart rate

Pedometer

Blood pressure monitor

Sleep monitor

13. How is the battery performance of the smartwatches

Highly unsatisfied ●—●—●—●—● Highly satisfied

14. What is one of the disadvantage of smartwatch in your perception

- ☐ Price
- ☐ Size
- ☐ Privacy concerns
- ☐ Other

15. Is the features of smartwatches are easily understandable

- ☐ Yes
- ☐ No
- ☐ Some are difficult

16. Do you think smartwatches give accurate data on health and wellness

- ☐ Yes
- ☐ No
- ☐ May be

17. Is the smartwatch worth for its price

- ☐ Yes
- ☐ No
- ☐ Maybe

18. Does smartwatch helps you in your studies

- ☐ Yes
- ☐ No
- ☐ May be

19. Your satisfaction level for the design of the smartwatch

Highly unsatisfied ●—●—●—●—● Highly satisfied

20. Your satisfaction level for the availability of apps in smartwatches

Highly unsatisfied ●—●—●—●—● Highly satisfied

21. Which of the following specification you like to be inserted in smartwatches *

- ☐ Large screen
- ☐ Waterproof
- ☐ Longer battery life

22. Your satisfaction level for the speakers in the smartwatches

Highly unsatisfied ●—●—●—●—● Highly satisfied

23. Your overall satisfaction for the smartwatches

Highly unsatisfied ●—●—●—●—● Highly satisfied

A STUDY ON STUDENTS PREFERENCE ON SMARTWATCHES

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ABSTRACT

Students are keen to make use of new technologies to enhance their learning. At the latest, the launch of the smartwatch has made the general public aware of the smartwatch and the possibilities, at least according to the marketing hype, that these wearable computers offer. The sales of smartwatches are predicted to increase rapidly in the next years and many of the adopters of this technology will undoubtedly be students. Smartphones have become embedded in everyone's life. However, smartwatch as an extension of smartphones have experienced a different thing. The main aim of the study is to find which brand of smartwatch has highest usage. To know the perception of students in smart watches and to find which specification in smartwatch has highest usage. The study was taken between students with 106 respondents over 3 months. The study concluded that many students were highly interested to buy smartwatches. The study further touches on their efficient management of power, easy user interface and the minimal display. Many respondents suggested that battery life of the smart watch must be improved. Some of the devices were stop responding in sometimes this problem must be sorted out. Many respondents suggested that waterproof tech also must be improved. Display these watches are not comfortable for the vision so the display must be altered with other type of screen. Body built is not so much strong so it is very danger to use smartwatch while playing games, so the body must be built strong.

KEYWORDS: smartwatch, students preference, future, digital, technology.

INTRODUCTION

The development and advance of technology are enormous this time. The most emerging technology by now is the Internet of Thing (IoT) which allow many technological devices to be connected through the internet. One of the implementations is wearable devices, the wireless sensor attached in the body that open new experiences to the daily life activities. Although experiments on wearables have been conducted since the early 1980s, wearables have only recently come into general users. Today's smartwatches run mobile operating system and function as a portable media player, FM radio player, audio, and video files through a Bluetooth or Wi-Fi connection. Smartwatch also has the ability as the extension of its pairing smartphone in providing phone call and texting features. According to the research from Counterpoint's Global Smartwatch Tracker, global smartwatch shipments grew 37% in Q2 2018 with Apple domination with 41% share. Further, smartwatch makers are looking to add cellular connectivity for standalone use-cases as 90% of smartwatches shipped today are not cellular capable. As many researchers developed studies on smartwatch usage and factor adoptions [6, 7, 8, 9, 10], none of them explore the influence factors that affecting customer's perceptions toward smartwatch, regarding its usability, brand, and pricing. This study closing this gap and provide a deep understanding of Indonesian user perception of a smartwatch. The growth of smartwatch in Indonesia has encountered ups and downs.

OBJECTIVES OF THE STUDY

The main aim of the study is to find which brand of smartwatch has highest usage. To know the perception of students in smart watches. To find which specification in smartwatch has highest usage.

REVIEW OF LITERATURE

Shweta A. Panchbudhe, Nandkishor Bankar, Sanika Kalambe, Ujwalla Gawande, 2021, It is based on a Questionnaire Study about the Experiences of Smart Watches of Different Brands. Smart watches are becoming increasingly common because they allow users to access and communicate online information while on the move. Smart watches also offer the user spatial and temporal information and show a map on the screen. It's a modern device that came out a few years ago. A smart watch is a modern technology that incorporates smart phone functionality with continuous data monitoring to encourage fitness, such as step tracking, heart rate monitoring, energy consumption, and physical activity levels. It also provides users with input to help them control their health. The study's findings indicate that smart watches are becoming more common and useful for people in their daily lives, as they allow users to access information about their environment and body-related conditions.

Mark M. Afrouz and Tobias Wahl, 2019, The rapid growth and increased competition in today's technology industry leads to a growth in consumers' expectations on new presented products. The results of this study provide empirical evidence that the attitude towards using was the strongest predictor for the intention to purchase smartwatches. The outcomes further show that the attitude is influenced by the two hedonic factors perceived enjoyment and design aesthetics as well as by the utilitarian factor perceived usefulness. Out of those three factors perceived enjoyment was found to exert the strongest influence on attitude. Contrary to previous research, the results of this study could not reveal a significant influence of subjective norms on purchase intention. However, beside the attitude, perceived behavioral control was also found to influence purchase intention. The findings of this research allowed to draw a variety of theoretical and managerial implications as well as to develop possible research opportunities for future studies.

APURVA ADAPA, 2016, This study aims to examine the factors and issues in adoption of smart wearable devices. Wearable devices have many functions to offer which make them very useful in our daily lives. However, factors influencing the adoption of these devices are not well understood. This research explores the inhibiting and contributing factors influencing the adoption of wearable devices by employing the laddering approach. Qualitative data were collected through in-depth interviews using the laddering technique in order to understand these factors. This research has advanced our understanding on the adoption of wearable devices and provide some insights into the key design criteria to better fit users' needs.

Stephanie H.W. Chuah Philipp A. Rauschnabel Nina Krey, 2016, Although still in the early stages of diffusion, smartwatches represent the most popular type of wearable devices. Yet, little is known about why some people are more likely to adopt smartwatches than others. To deepen the understanding of underlying factors prompting adoption behavior, the authors develop a theoretical model grounded in technology acceptance and social psychology literatures. Empirical results reveal perceived usefulness and visibility as important factors that drive adoption intention, suggesting that smartwatches represent a type of 'fashnology' (i.e., fashion and technology). The magnitude of these antecedents is influenced by an individual's perception of viewing smartwatches as a technology and/or as a fashion accessory. Theoretical and managerial implications are discussed.

Dr.P kishore kumar and V venkateshwarlu, 2014, conducted a study on customer perception and purchasing intention toward smart watches, found that consumers believe smart watches can be used to complete personal and professional tasks very conveniently. . The consumers are thinking that smart watches are reasonably price based on its feature also consumers are likely own a smart watch in future to perform variety of tasks.

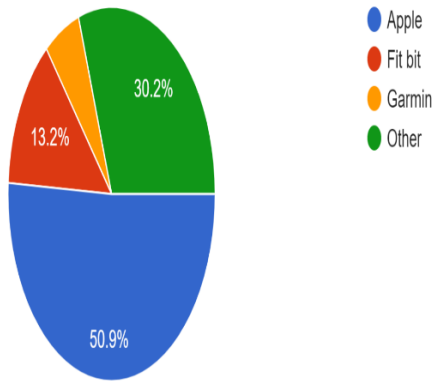
RESEARCH METHODOLOGY:

Based on my study I have used descriptive research . And also, I take 106 respondents for my study . I use questionnaire as a Primary data and Secondary data from articles.

RESULT

Table showing MOST PREFERED SMARTWATCH BRAND

Particulars	No. of respondents	Percentage
Apple	54	51%
Garmin	6	6%
FitBit	14	13%
Others	32	30%

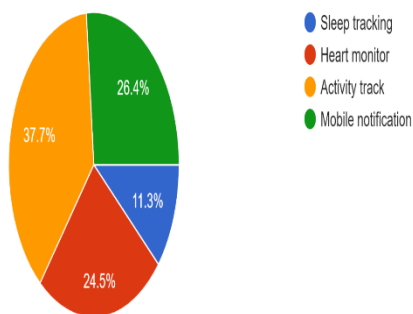


INFERENCE

Majority 51% respondents prefers Apple.

Table showing MOST LIKED SPECIFICATION IN SMARTWATCHES

Particulars	No. of respondents	Percentage
Sleep tracking	12	11%
Heart monitor	26	25%
Activity Tracking	40	38%
Mobile notification	28	26%

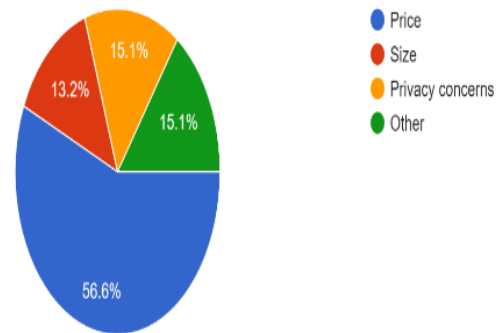


INFERENCE

Majority 38% respondents likes activity tracking.

Table showing disadvantages of smartwatches

Particulars	No. of respondents	Percentage
Price	60	57%
Size	14	13%
Privacy concerns	16	15%
Others	16	15%

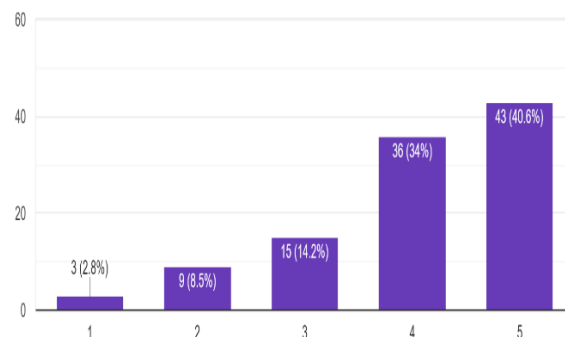


INFERENCE

Majority 57% respondents says that price is the disadvantage.

Table showing overall satisfaction for the smartwatches

Particulars	No. of respondents	Percentage
Highly unsatisfied	3	3%
Unsatisfied	9	8%
Neutral	15	14%
Satisfied	36	34%
Highly satisfied	43	41%



INFERENCE

Majority 41% respondents were highly satisfied by the smartwatches.

ONE-WAY ANOVA TEST

Null hypothesis(H0): There is no significance difference between overall satisfaction and affordability of smartwatches.

Alternate hypothesis(H1) : There is a significance difference between overall satisfaction and affordability of smartwatches.

DESCRIPTIVES								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
5	43	2.033	0.182	0.023	1.986	2.081	2.00	3.00
4	36	2.193	0.476	0.050	2.092	2.294	2.00	4.00
3	15	2.620	0.490	0.069	2.480	2.759	2.00	3.00
2	9	2.500	1.000	0.500	0.908	4.091	2.00	4.00
1	3							
Total	106	2.258	0.482	0.034	2.191	2.325	2.00	4.00

Overall satisfaction*affordability of smartwatches					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.119	3	3.373	18.241	0.043
Within Groups	36.428	197	0.185		
Total	46.547	200			

INFERENCE

Since p value 0.043 is less than 0.05, null hypothesis is rejected and alternate hypothesis is accepted. Hence, There is a significance difference between overall satisfaction and affordability of smartwatches.

CHI-SQUARE TEST

Null hypothesis(H0): There is no significant association between education and their perception of smartwatch usefulness in studies.

Alternate hypothesis(H1): There is a significant association between education and their perception of smartwatch usefulness in studies.

Educational qualification*usefulness of smartwatches in studies						
	Usefulness of smartwatches in studies					Total
			yes	no	Maybe	
Educational qualification	UG	Count	11	39	25	77
		Expected Count	18.0	37.5	19.9	77.0
	PG	Count	13	24	14	52
		Expected Count	12.2	25.4	13.5	52.0
	DIPLOMO	Count	11	23	11	46
		Expected Count	10.8	22.4	11.9	46.0
	OTHERS	Count	12	12	2	26
		Expected Count	6.1	12.7	6.7	26.0
	Total	Count	47	98	52	201
		Expected Count	47.0	98.0	52.0	201.0

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.110 ^a	9	0.118
Likelihood Ratio	14.955	9	0.092
Linear-by-Linear Association	10.876	1	0.001
N of Valid Cases	201		

INFERENCE

Since p value 0.118 is greater than 0.05, Null hypothesis is accepted. Hence, There is no significant association between education and their perception of smartwatch usefulness in studies.

FINDINGS

- ❖ Majority 44% respondents gave 5 rating for battery performance.
- ❖ Majority 57% respondents says that price is the disadvantage.
- ❖ Majority 58% respondents says that features are easily understandable.
- ❖ Majority 41% respondents thinks smartwatches give accurate data on health and wellness.
- ❖ Majority 45% respondents says smartwatches are worth for its price.
- ❖ Majority 41% respondents says that smartwatches helps them in studies.
- ❖ Majority 44% respondents were highly satisfied for the design of the smartwatches.
- ❖ Majority 40% respondents were highly satisfied for the availability of apps in smartwatches.
- ❖ Majority 59% respondents likes waterproof to be inserted.
- ❖ Majority 36% respondents were highly satisfied by the speakers in smartwatches.
- ❖ Majority 41% respondents were highly satisfied by the smartwatches.

SUGGESTIONS

- ❖ Many respondents suggested that battery life of the smart watch must be improved.
- ❖ Some of the devices were stop responding in sometimes this problem must be sorted out.
- ❖ Many respondents suggested that waterproof tech also must be improved.
- ❖ Display these watches are not comfortable for the vision so the display must be altered with other type of screen.
- ❖ Body built is not so much strong so it is very danger to use smartwatch while playing games, so the body must be built strong.

CONCLUSION

The study concluded that many students were highly interested to buy smartwatches. The study further touches on their efficient management of power, easy user interface and the minimal display. As a result of that many companies were started to infuse more technology in smartwatches. The wearable world is constantly changing. Every year, new products and brands are

introduced, offering better metrics and user experience, while other brands fade away from the consumer market for different reasons. Improvements in product quality provide new research opportunities. This project set out to determine if the smart watch would be useful to university students. A review of literature was first conducted where wearable computing was discussed further, specifically in the area of smart watches where their known advantages and disadvantages were acknowledged. Previous work done on application development for smart watches and other mobile devices such as smart phones was also investigated. The application requirements of users found in previous usability studies were documented, where it was found that users want similar functionalities from different devices. Possible future smart watch advancements based on current research were also discussed.

REFERENCES

- ❖ Park, E., et al., Understanding the emergence of wearable devices as next-generation tools for health communication. *Information Technology & People*, 2016. 29(4): p. 717-732.
- ❖ Chang, H.S., S.C. Lee, and Y.G. Ji, Wearable device adoption model with TAM and TTF. *International Journal of Mobile Communications*, 2016. 14(5): p. 518-537.
- ❖ Koo, S.H., Consumer Differences in the United States and India on Wearable Trackers. *Family and Consumer Sciences Research Journal*, 2017. 46(1): p. 40-56.
- ❖ Page, T., A forecast of the adoption of wearable technology. 2015.
- ❖ Sharifi, S.S. and M. Palmeira, Customers' reactions to technological products: The impact of implicit theories of intelligence. *Computers in Human Behavior*, 2017. 77(Supplement C): p. 309-316.
- ❖ Adapa, A., et al., Factors influencing the adoption of smart wearable devices. *International Journal of Human-Computer Interaction*, 2018: p. 1-11.
- ❖ Rajanen, D. and M. Weng, Digitization for fun or reward?: a study of acceptance of wearable devices for personal healthcare. in *Proceedings of the 21st International Academic Mindtrek Conference*. 2017. ACM.
- ❖ Journal of Theoretical and Applied Information Technology 30th September 2019. Vol.97. No 18 © 2005 – ongoing JATIT & LLS ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195 4748
- ❖ Sultan, N., Reflective thoughts on the potential and challenges of wearable technology for healthcare provision and medical education. *International Journal of Information Management*, 2015. 35(5): p. 521-526.
- ❖ Wright, R. and L. Keith, Wearable technology: If the tech fits, wear it. *Journal of Electronic Resources in Medical Libraries*, 2014. 11(4): p. 204-216.
- ❖ Jeong, S.C., et al., Domain-specific innovativeness and new product adoption: A case of wearable devices. *Telematics and Informatics*, 2016.
- ❖ Cecchinato, M.E., A.L. Cox, and J. Bird. Smartwatches: the Good, the Bad and the Ugly? in *Proceedings of the 33rd Annual ACM Conference extended abstracts on human factors in computing systems*. 2015. ACM.
- ❖ Choi, J. and S. Kim, Is the smartwatch an IT product or a fashion product? A study on factors affecting the intention to use smartwatches. *Computers in Human Behavior*, 2016. 63: p. 777-786.
- ❖ IDC, Smartwatch Market Declines 51.6% in the Third Quarter as Platforms and Vendors Realign, IDC Finds. 2016, IDC.
- ❖ Ha, T., et al., Examining user perceptions of smartwatch through dynamic topic modeling. *Telematics and Informatics*, 2017. 34(7): p. 1262-1273.
- ❖ Chuah, S.H.-W., et al., Wearable technologies: The role of usefulness and visibility in smartwatch adoption. *Computers in Human Behavior*, 2016. 65: p. 276-284.