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A Study on the Role of Fitness Smartwatches in Promoting Active Lifestyles among Different Age Groups.

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ABSTRACT:

Sedentary lifestyles and physical inactivity are becoming increasingly common, which is a major public health concern. Fitness smartwatches have evolved as a popular tool for encouraging physical activity among people of all ages. The purpose of this systematic research has been to look into the effect of fitness smartwatches in promoting active lifestyles among people of various ages. For the purpose of the study structured questionnaire is prepared and collected the responses from 149 respondents. To increase the efficacy of the study , one cross tabulation, one way ANOVA and Descriptive stats tools were used and found that there is a significant difference in smartwatch adoption across different age groups but no significant difference in the perceived benefit and ease of use, even though the majority of respondents use them infrequently and have noticed an increase in their level of physical activity.

Key words: Fitness smartwatch, lifestyle, physical activity.

INTRODUCTION:

The concept of a smartwatch dates back to the early 1980s, with the release of the Pulsar digital watch by Hamilton Watch Company. This watch featured a calculator, calendar, and alarm, and was considered revolutionary at the time.

However, it was not until the late 1990s that the term "smartwatch" was coined, when Timex released the Datalink wristwatch, which could communicate with a computer and download data.

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In 2004, Fossil released the Wrist PDA, which was a hybrid between a personal digital assistant (PDA) and a wristwatch. It had a touch screen display and could sync with a computer to download data and messages.

With the Pebble smartwatch's Kickstarter debut in 2012, the actual smartwatch revolution got under way. It was a straightforward, monochromatic e-paper watch that could pair with cellphones through Bluetooth and show texts, emails, and notifications. The first widely acclaimed smartwatch, the Apple Watch, was introduced by Apple in 2014. It could make phone calls, had a touch screen display, and featured numerous tools for tracking one's health and fitness.

Since then, other businesses have released their own models of smartwatches with a variety of functionalities, including heart rate monitoring, GPS tracking, and even mobile payments. The integration of artificial intelligence and cutting-edge health monitoring functions is just one of the exciting developments that are coming for smartwatches in the near future.

Features and Uses of Smartwatches:

- ✓ Health monitoring: It is one feature that many smartwatches offer. These sensors can track heart rate, sleep habits, and physical activity. These functions assist users in keeping track of their fitness levels, enhancing their health, and making lifestyle decisions that are well-informed.
- ✓ Reminders and Alerts: Smartwatches can also be used to set reminders and alerts for significant events, such as appointments and tasks, or even to remind users to hydrate or take breaks during the course of the working day.
- ✓ Fitness Tracking: Smartwatches can monitor a user's exercise routines as well as track their daily steps, distance travelled, and calories burned. For those who wish to track their fitness development and establish fitness objectives, this function is extremely helpful.
- ✓ Smart Assistants: Several smartwatches come with smart assistants like Siri or Google Assistant, which let users make phone calls, send texts, and even manage their smart home devices without a phone.
- ✓ Sleep Tracking: Smartwatches can track sleep patterns and offer advice on how users might get better-quality slumber. Those who struggle to fall asleep or who want to improve their sleeping habits may find this function extremely helpful.
- ✓ Music and Entertainment: Music, podcasts, and other kinds of entertainment can be streamed directly to smartwatches. This feature is especially helpful for those who want to pass the time while exercising or commuting to work.
- ✓ Payment and navigation functions: Some smartwatches also provide payment capabilities that let users make purchases right from their watch, as well as navigation tools that let users go around without having to take out their phone.

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Challenges of Smart Watch:

- While smartwatches offer a range of benefits for lifestyle management, there are also several challenges that users may face when using these devices. Some of these challenges include:
- Battery Life: Smartwatches require frequent charging, which can be inconvenient for users who rely heavily on their devices.
- Compatibility: Smartwatches may not be compatible with all smartphones, which can limit their functionality for some users.
- Cost: Smartwatches can be expensive, which may make them inaccessible to some users.
- Limited Screen Size: The small screen size of smartwatches can make it difficult to read messages or access certain apps, which can be frustrating for some users.
- Data Privacy: Smartwatches collect and transmit data about their users, which can raise privacy concerns for some individuals.
- Limited App Support: Some smartwatches may have limited support for third-party apps, which can limit their functionality for some users.
- Learning Curve: Learning to use a new device can take time, and some users may find it challenging to adapt to the interface and features of their smartwatch.

Overall, while smartwatches offer a range of benefits for lifestyle management, users may also face several challenges when using these devices. It's important to carefully consider these challenges before investing in a smartwatch to ensure that it is the right choice for your needs and lifestyle.

TAM model

A theoretical model that explains how people take to and make use of new technologies is called the Technological Acceptance Model (TAM). It was first presented by Fred Davis in 1986, and since then it has grown to be a popular model for analysing user acceptability of various technologies.

The two fundamental parts of the TAM model are perceived usefulness (PU) and perceived usability (PU) (PEOU).

The user's perception of how much a technology may aid them in achieving their objectives and enhancing their performance is known as perceived usefulness. The user evaluates whether employing the technology is worthwhile in light of its advantages.

The user's perception of how simple they find it to utilise the technology is referred to as perceived ease of use. The user takes into account elements including the technology's complexity, its level of usability, and the work needed to learn and operate the technology.

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According to the TAM model, PU and PEOU both have an impact on a user's perspective on using a technology, which in turn has an impact on their intention to utilise it. In other words, a user is more likely to see a technology favourably and want to utilise it if they believe it to be practical and simple to use.

The TAM model also contends that outside variables like social influence, training, and support may have an effect on a user's attitude towards and intention to utilise a technology.

The TAM model, in its whole, offers a framework for comprehending the variables that affect user acceptance and adoption of new technology. Organizations can better develop and advertise their technology to increase the likelihood of successful adoption and use by recognising these aspects.

TAM model in smart watch technology:

To assess the acceptance and deployment of new technology, many people utilise the TAM (Technology Acceptance Model). To identify the elements that affect the acceptance and use of smartwatches, this model has been applied to the field.

Perceived usefulness and perceived ease of use are the two key parts of the TAM model. Perceived usefulness measures how much a user thinks a technology will improve their performance, whereas perceived usability measures how much a user thinks a technology will be simple to use.

Based on features like alerts, mobile payments, and health and fitness tracking, smartwatches' perceived usefulness can be assessed. If users believe that the features of smartwatches will improve their productivity and general quality of life, they are more inclined to purchase one.

The user interface, the device's size and weight, and the device's communication with other devices are some examples of the factors that can be used to measure perceived usability. If users find smartwatches simple to use and intuitive, they are more likely to adopt them.

The cost of the device, the availability of suitable apps, and the compatibility with other devices are other elements that may affect the acceptance and use of smartwatches.

With the use of the TAM model, makers of smartwatches may better understand the elements that affect consumer adoption and usage of their products and design their goods accordingly. In the end, this can result in a product with more adoption and success.

REVIEW OF LITERATURE:

1. Smart wearables, particularly fitness wearables, are at the forefront of the consumer electronics market, according to Pal et al. (2018) .The global market for smart wearables is predicted to reach $62.96 billion in sales in 2023 after seeing years of exponential growth.

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2. Given that customers' awareness of their health is already on the rise and that obesity is a global public health concern and a pandemic, the market for fitness wearables in particular is anticipated to maintain its growth from previous years and surpass 230 million shipments globally in 2024. (Statista, 2018).
3. According to Statista, the global smartwatch market size was valued at $23.2 billion in 2020 and is expected to reach $43.8 billion by 2026.
4. In terms of global shipments, Apple was the leading smartwatch vendor in 2020 with a market share of 33.9%, followed by Samsung with 8.8% and Huawei with 8.1%, according to IDC.
5. A survey conducted by GlobalWebIndex in 2020 found that 17% of internet users worldwide own a smartwatch. The same survey found that the highest smartwatch adoption rates were in Asia Pacific, with 21% of internet users owning a smartwatch, followed by Europe with 17%, and North America with 14%.
6. According to a report by Counterpoint Research, Apple Watch continues to dominate the global smartwatch market, accounting for 40% of all smartwatch shipments in Q2 2021.
7. According to Statista, Smartwatch and fitness tracker shipments worldwide 2021-2024:
   Shipments of smartwatches and fitness trackers are anticipated to expand between 2021 and 2024 at a compound annual growth rate of 11%. In 2024, 280 million units are anticipated to be shipped. Smartwatches are used to measure communication and organisational duties, as well as fitness-related metrics.

RESEARCH DESIGN:

- **Objectives:**

1. To study the present scenario of smartwatch usage among different ages.

2. To investigate the significance of smartwatch adoption in promoting active lifestyles among different age groups.

3. To evaluate the perceived benefit and ease of use of smartwatches among consumers.

- **Data Collection**:

  - Primary Data: Structured Questionnaire
  - Secondary Data: Research Article and websites

- **Sample Selection:**
  - Tool and Technique: Convenience Sampling
  - Sample Size: Respondents Targeted: 150, Response received: 149.

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- Statistical Tool Used: Simple cross tabulation, One way ANOVA, Descriptive stats.

Scope:

The study conducted in Bengaluru city.

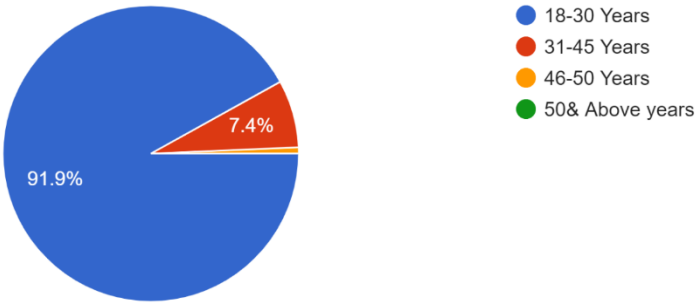
Limitation of the Study:

- The study based on the responses given by the respondents.
- The study is limited to Bengaluru city.

EXPLANATORY STATISTICS OF RESEARCH:

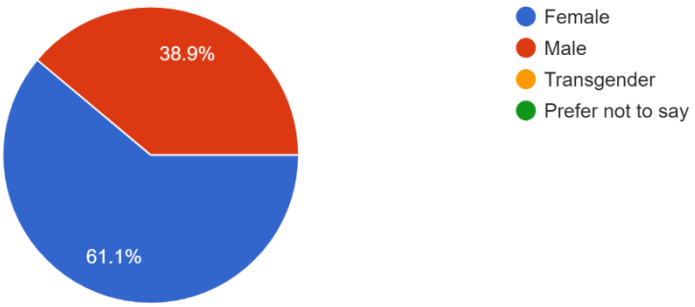
Reliability Statistics	
Cronbach's Alpha	N of Items
.706	23

1. Age Group:



The study shows that 91.9% of the respondents were between the age group of 18-30 years, followed by 7.4% of respondents between 31-45 years, followed by the other age group.

2. Gender:



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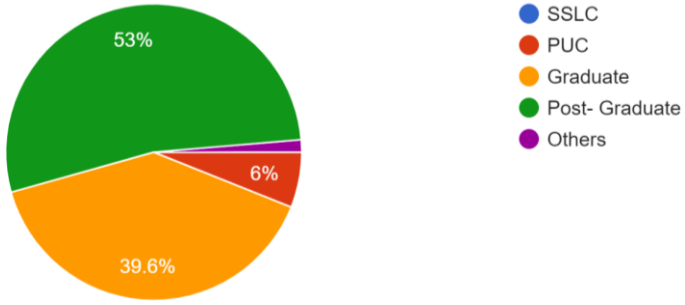
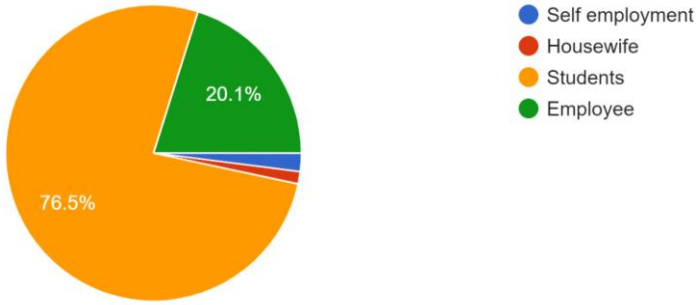
The above chart exhibits that 61.1% of female and 38.9% of male respondents responded to the questionnaire.

3. Qualification:



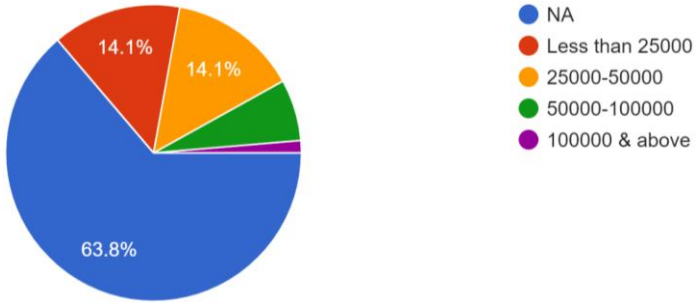
The above chart displays that 53% of the respondents are from PG background, 39.6% are graduates, 6% from PUC and the remaining from others.

4. Occupation:



The above chart displays that 76.5% of the respondents are students, 20.1% are employees, and remaining captured as self employment and housewives category.

5. Monthly Income:



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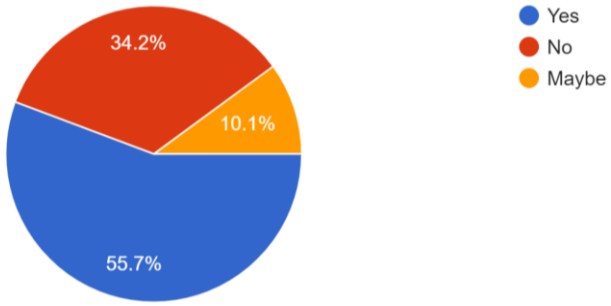
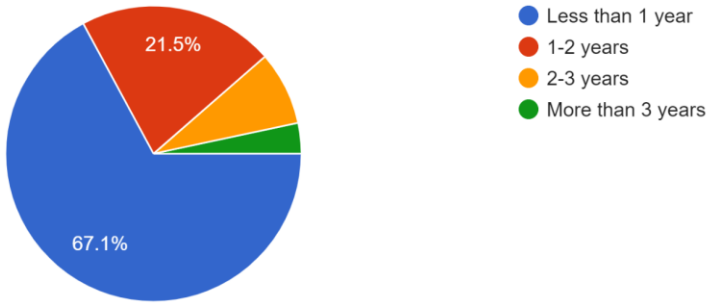
The above chart displays that 63.8% of the respondents do not have any source of income, 14.1% of the respondents receive less than 25000, 14.1% of the respondents receive income between 25000-50000 and remaining captured by 50000-100000 and 100000 above income level.

6. Status of Owning Fitness Watch:



The above chart displays that 55.7% of the respondents owns a smart watch, 34.2% of the respondents do not own and the remaining 10.1% may be own it which is situational.

7. Usage Pattern of Smartwatch:



The above chart depicts that 67.1% of the respondents have been using the smart watch for the period less than 1 year, 21.5% between 1-2 years and the remaining 2-3 years and more than 3 years.

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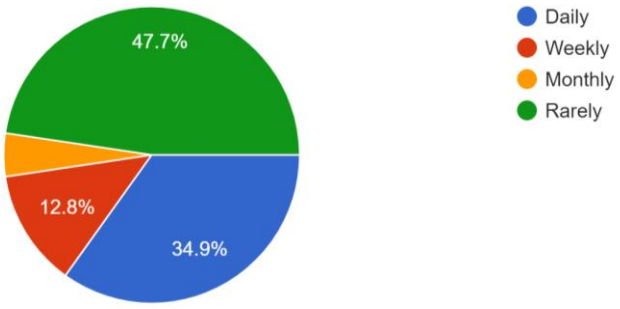
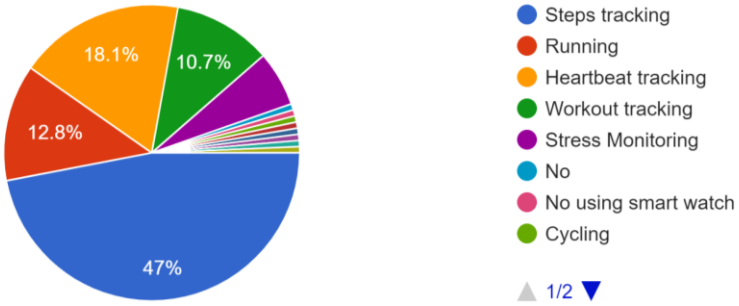


8. Frequency of Usage of Smart Watches:

The above depicts that 47.7% of the respondents rarely use the smart watches, 34.9% of the respondents use it daily, 12.8% use it weekly and the remaining monthly basis.

9. Purpose of Usage of Smartwatch:



The chart depicts that 47% of the respondents use smart watch for steps tracking, 12.8% for running, 18.1% for heartbeat tracking, 10.7% for workout tracking and the remaining for stress monitoring, cycling, 1% for all the purpose, and 0.14% do not use at all.

10. Level of increase in physical activity using smart watches.

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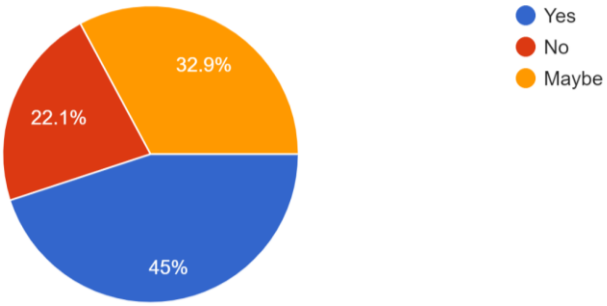

The chart displays that 45% of the respondents have witnessed the increase in the level of physical activity using smart watches, 22.1% have not and the remaining 32.9% may be influence by the smartwatches to involve in the physical activities using smart watches.

11. Objective: 1

To study the present scenario of smartwatch usage among different ages .

Smart Watch Usage Among Different Age- Groups							
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Age Group	1 (18- 30 Years)	1	3	43	63	26	136
	2 (31-45 years)	0	0	4	2	6	12
	3 (46-50 years)	0	0	0	1	0	1
Total		**1**	**3**	**47**	**66**	**32**	**149**

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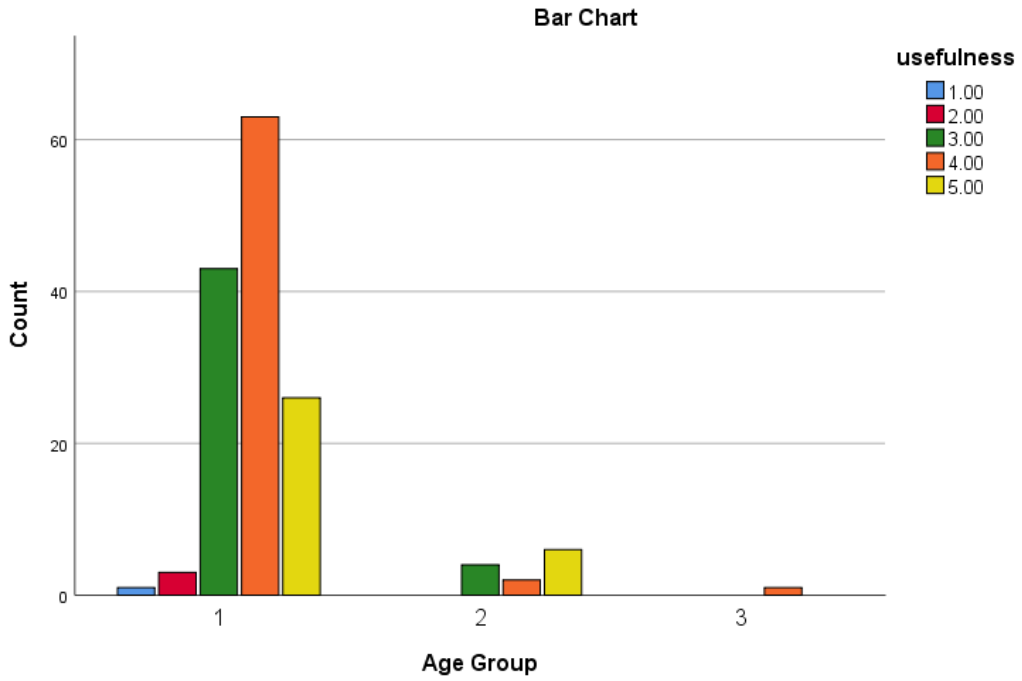

The chart shows that the majority of the 91.2% of the smart watch users belong to the age group of 18-30 years , followed by 8.05% to 31-45 years and the remaining to 46-50 years of age group. Thereby we can say that smart watch usage among 18-30 years is more.

12. Objective : 2

To investigate the significance of smartwatch adoption in promoting active lifestyles among different age groups.

Hypothesis 1: To investigate the significance of smartwatch adoption in promoting active lifestyles among different age groups.

Ho – There is no significant difference in adoption of smartwatches across different age groups

H1 – There is a significant difference in adoption of smartwatches across different age groups.

ANOVA ANALYSIS					
Behavioural Intention to Use (BIU) of smartwatch.	**Sum of Squares**	**Difference**	**Mean Square**	**F**	**Sig.(p)**

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I intend to use a fitness smartwatch regularly to track my fitness progress.	Between Groups	1.689	2	.845	1.174	.312
	Within Groups	105.049	146	.720		
	Total	106.738	148			
I plan to use a fitness smartwatch to help me stay active.	Between Groups	3.891	2	1.946	2.714	.070
	Within Groups	104.659	146	.717		
	Total	108.550	148			
I intend to control unhealthy lifestyle using smartwatch.	Between Groups	2.590	2	1.295	1.377	.255
	Within Groups	137.262	146	.940		
	Total	139.852	148			

The above table indicates the average value of the response received by the respondents to the question asked based on the behavioral intention to use smartwatch. As it is clear from the significant value which is represented as p and $p<\alpha$, Null Hypothesis is rejected. There is a significant difference in adoption of smartwatches across different age groups.

13. Objective 3:

To evaluate the perceived benefit and ease of use of smartwatches among consumers.

Descriptive Statistics					
Perceived Ease of Use (PEI)	**N**	**Min**	**Max**	**Mean**	**Std. Deviation**
I find it easy to use a fitness smartwatch.	149	2	5	4.09	.779
I find it easy to navigate the features of a fitness smartwatch.	149	1	5	3.89	.801
I feel confident in my ability to use a fitness smartwatch.	149	2	5	4.00	.805
Valid N (listwise)	149				

The above table indicates the minimum, maximum, mean value and standard deviation of response received by the respondents to the question asked based on the perceived ease of use among smartwatch users.

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FINDINGS AND SUGGESTIONS OF THE STUDY:

The aforementioned study was carried out to determine the function and effects of smartwatch usage among various age groups. According to the study's findings, the majority of respondents are between the ages of 18 and 30, are female, have a PG degree as their highest level of education, are unemployed, and have been using smart watches for less than a year.

The study found that there is a significant difference in smartwatch adoption across different age groups but no significant difference in the perceived benefit and ease of use, even though the majority of respondents use them infrequently and have noticed an increase in their level of physical activity.

CONCLUSION:

It may be concluded that this demographic values the convenience and technological capabilities that smart watches offer based on the high usage of smart watches among the 18–30 age group. It's important to remember that smart watches might also be required for individuals with different ages, such as older people who might benefit from health tracking capabilities or people with hectic schedules who need a device to keep them connected and organised while on the move.

The benefits of smart watches go beyond merely the younger age group, and they have generally emerged as a popular and practical tool for many people. The use of smart watches is anticipated to increase in popularity and significance in our daily lives as technology develops.

Bibliography:

Adapa, A., Nah, F.F.H., Hall, R.H., Siau, K., Smith, S.N. 2018. Factors influencing the adoption of smart wearable devices. International Journal of Human–Computer Interaction, 34(5), 399-409.

Johnson EM, Howard C. A library mobile device deployment to enhance the medical student experience in a rural longitudinal integrated clerkship. J Med Libr Assoc. 2019 Jan;107(1):30-42. doi: 10.5195/jmla.2019.442. Epub 2019 Jan 1. PMID: 30598646; PMCID: PMC6300226.

Rawin Vongurai, 2020. Factors Influencing Intention to Use Fitness Trackers: A Case Study on Thais' Living in Bangkok, International Journal of Economics and Business Administration Volume VIII, Issue 2, 2020

Rajagopal, 2013. "The Human Factors," Palgrave Macmillan Books, in: Managing Social Media and Consumerism, chapter 9, pages 173-194, Palgrave Macmillan.

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Research paper UGC CARE Listed (Group -I) Journal Volume 11, Iss 12, Dec 2022

Talukder, M.S., Chiong, R., Bao, Y., Hayat Malik, B. 2019. Acceptance and use predictors of fitness wearable technology and intention to recommend: An empirical study. Industrial Management & Data Systems, 119(1), 170-188.