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A study on the Use of Smart Wearables in Uttar Pradesh

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ABSTRACT

This study looks into the variables influencing young people in Uttar Pradesh's perception of the usefulness of smart wearables. It aims to determine how much youngsters know about smart wearables and how that knowledge influences how they use them. Furthermore, the impact of social media exposure on smart wearable usage, the significance of customisation advantages, and privacy concerns that influence the probability of smart wearable adoption. Additionally, it examines aspects like perceived utility, usability, and expense in relation to adoption level. In this instance, a route model is used by the study to build a number of relationships between these variables. Additionally, it was discovered that while social media marketing and wearable technology awareness are important factors that influence smart wearable acceptability, privacy restrictions have a negative effect. A quick review of the validity and reliability coefficients reveals that the measurement scales need to be improved on a number of constructs in order to increase validity. Thus, the researcher puts forth the following two strategic recommendations to improve the use of smart wearables among U.P's youngster population: awareness campaigns and privacy interventions. This study is important because it provides insight into how young consumers use smart wearables and offers recommendations.

Keywords: Markets Awareness, Adoption of Technology, Smart Wearables, Structural Equation Modelling.

Introduction

One of the key developments in the rapidly expanding field of personal technology that is changing how people interact with their gadgets and arrange their lives is smart wearables. These sophisticated gadgets, which include health monitors, smartwatches, fitness trackers, and smart glasses, can be characterised as stylish gadgets that combine technology with style and have attracted a lot of customer interest. Youngster and the first adopters of technology are among the significant demographic groups that can be identified as samples of smart wearable technology users through market trend analysis. These individuals are considered trendsetters and should receive special attention.
IDC India projects that in 2023, the wearables market in India would grow by 34% and reach a record high of 134 million devices. Two million pieces. 28.4 million units were sold in 2023 (October–December), up 12.7% from the same period last year, showing unmet market demand. Throughout the holiday season, there were a lot of new releases coupled with related sales and discounts; but, in the second half of 2023, there was a stock build-up. During 2023, the average selling price (ASP) of all wearables decreased from US$25.0 to US$21.2
Among wearables, smartwatches with fusion capabilities have a wider range of applications and a longer lifespan (Dehghani and Kim, 2019). Although the industry has shown interest in wearable technology, most academic research on the subject has been published in the context of electronic textiles or health and fitness, with a greater focus on the technology than the user. (Kim and Choi, 2016).

In recent years, wearable technology have been adopted into luxury fashion labels, combining trendy and technological elements with smart design (Wright and Keith, 2014; Hartmans, 2018). Smartwatches, such the Tag Heuer Connected Modular watch and the Louis Vuitton Tambor Horizon smartwatch, have developed into high-end accessories rather than just wristwatches (Hartmans, 2018). They might appeal to their youngster counterparts, who have been identified as the largest user base for wearable technology and as the primary purchasers of luxury goods internationally (Higgins et al., 2016). (Gartner, 2017).

Despite the fact that smartwatches are seen of as the first high-tech generation, people are drawn to them because of their creative character (Young and Hinesly, 2012). The TAM model was created by Davis (1986) to gauge consumers' opinions and perceived ease of use of network technologies. It has since been used to examine the adoption of wristwatches (Kim and Shin, 2015).

Nevertheless, prior studies focused on the functional aspects (i.e., "perceived usefulness and ease of use") as well as the personal aspects of uses and gratifications (i.e., the need for individuality and narcissism), but they neglected to look at the significance of emotive and communal aspects. The ideals that shape the luxury spending of youngster consumers are anticipated to have a major impact on the uptake of luxury smartwatches. Individual, social, and functional values are all included in the model of luxury values proposed by Wiedmann et al. (2007), and the authors' conclusions are particularly relevant to the examination of this subject. The "Theory of Reasoned Action" (TRA) (Ajzen and Fishbein, 1975) provides a foundation for purposeful, planned consumer behaviour, and it is essential to consult it when examining "SMART WATCH ADOPTION" from the consumer perspective (Yousafzai et al., 2010:475).

Consumer attitudes and subjective standards—which are further categorised as behavioural intents created as a result of social and personal pressures—determine actual behaviour, according to TRA. As a result, behavioural objective has been discussed as the most accurate predictor of human behaviour (Ajzen and Fishbein, 2005), and research in a variety of contexts has confirmed the link between attitude, intention, and behaviour (Paul et al., 2016; Mishra et al., 2014; Yousafzaiet al., 2010). To the best of the author's knowledge, however, this attitude-intention relationship has not received any empirical investigation in the context of "luxury fashion smartwatch adoption." This research aims to close this gap.

This study aims to determine how applicable smart wearables are to U.P's population, which is a growing group of people who are familiar with technology. The fact that the Indian youth generation is the largest generational cohort has long been recognised as a sociological fact. Given their ability to shape new purchasing patterns, it is clear that this generation will continue to shape India's economic future. Thus, this study aims to determine what factors have influenced the usage of such systems in an emerging market through their perceptions of smart wearables.

Review of the literature

Understanding the current status of research on the topic of smart wearables adoption among Youngster in Uttar Pradesh can be gained through an examination of the systematic literature review on the subject. This review concludes the ten academic research studies that were reviewed between 2015 and 2022. It accomplishes two main goals: it assesses Youngster awareness of smart wearables and identifies the factors that influence their adoption. It also investigates the impact of social media and relational privacy concerns on Youngster use of smart wearables.

As can be observed, the findings of the review that was presented are largely consistent with the assertions made in the suggested theories. Niknejad et al. (2020) and Kim & Shin (2015) discussed awareness and other factors that affect adoption and found that perceived usefulness, ease of use, and social influence were important in influencing the decision to adopt smart wearables. This highlights the significance of being aware of issues that may affect the adoption decision. Because of the content's orientation, it also helps to some extent in comprehending the effects of social elements. Blazquez et al. (2020), Kim and Shin (2015), and Park, E. (2020) identified social norms and sub-cultural appeal as influential in adoption decisions to some extent, thus supporting research questions and objective, even though the literature under consideration does not emphasise the function of social media.

Regarding privacy, it was found to be a significant factor influencing customer behaviour and raised as a concern in a number of research. Additional relevant research, such as those done by Wiesner et al. (2018), Niknejad et al. (2020), and Hidayat-ur-Rehman et al. (2022) & Hayat et al. (2022) on smart wearable payments, showed that adoption decisions were highly impacted by customers' concerns about privacy. This frequent observation in various contexts highlights how crucial it is to give privacy concerns some attention in the process of improving smart devices.

Other problems were also found during the review, such as the impact of personality on wearable technology, as shown by Rauschnabel et al. (2015). Furthermore, a more thorough knowledge of the factors influencing wearable technology acceptability was provided by the meta-analyses carried out for this study pool by Peng et al. (2022) and Manfreda et al. (2019). These findings can be viewed in the context of the set of related studies. While the review provides evidence for the majority of the proposed theories, it also identifies a number of gaps in the literature, including the specific, in-depth role that social media platforms play in smart wearable groups among youngster. This gap offers a future research opportunity to monitor the influence of social media on the adoption choice. In addition, a more thorough examination of the ways in which the benefits of customised

smart wearables might offset privacy concerns could provide academics and industry experts with useful insights.
The systematic literature review concludes by confirming the assumptions and outlining future research directions based on the findings of awareness, important factors, and privacy issues connected to youngster adoption of smart wearables. These results can serve as an empirical foundation for further research in this rapidly expanding field, which will have a favourable impact on both the scholarly study of smart wearables and their marketing to youngster customers.

Advantages and Disadvantages

There are the following advantages and disadvantages of smart wearable–

Advantages

1- As time goes on, we become more and more dependent on technology. Many of us consider our cell phones to be an extension of our arms these days. We reach for them first thing in the morning and check them last thing at night. This is further enhanced by wearable technology, which gives us access to technology without requiring us to fish around in our pockets or purses for our phones. Two examples of the different client bases that wearable technology serves are fitness fanatics who want to measure their progress and time-pressed mothers who have to check their emails while chasing after their kids.
2- Given that it's a major factor in many people's decisions to buy wearable technology, this point might very well be at the top of the list. We are continuously searching for methods to improve our efficiency and productivity in both our personal and professional lives in our fast-paced society. Wearable technology, which keeps us linked even while we're on the go, can help us do this. For instance, a wristwatch can help you quickly stay on top of your emails if you're a salesperson who is always on the go.
3- If you like to run or work out, you are aware of the significant influence that even a little increase in time can have. Wearable technology tracks your progress and provides you with real-time feedback so you can get the most out of your workouts. Those who are striving to meet a fitness objective or are training for an event may find this to be very helpful.
4- We demand knowledge and we want it now in a world where it is easily accessible. Thanks to wearable technology, we can get the information we need without having to bother pulling out our laptops or phones. A smartwatch, for instance, makes it easy to swiftly and conveniently examine information during a presentation. Alternatively, you can check your fitness tracker right away if you're out for a run and want to know what your current pace is (Kelsey, 2023).

Disadvantages

1- These are not gadgets for the delicate or the cheap. Depending on the features and maker, wearable technology can cost anywhere from a few hundred to several thousand Rupees.
2- A frequent critique of wearable technology is its propensity to divert attention. This is particularly valid for gadgets that let you use notifications or the internet. It could be incredibly tempting to check social media or your email when you should be concentrating on something else.
3. These tools might not always be precise and might be challenging to use. This is typically true for small, feature-rich devices that are compact, such smartwatches and other similar devices. It could take some getting used to using all of the features.
4. You might not always be able to get all you need from a wearable with a tonne of intriguing features. Before making a purchase, make sure a device has all the functions you require by conducting some research. If not, you might not be satisfied (Dreckett, & Dreckett, 2022).

Research Objective, Question and Hypothesis

Research Question: These research questions are presented in this paper.
1. How much do Uttar Pradesh Youngster know about smart wearables, and how does that information impact how they utilise them?
2. How Uttar Pradesh Youngster use of smart wearables has been impacted by social media exposure?
3. How will the advantages of personalisation and privacy concerns affect the chance that youngster will use smart wearables?
4. What effects are "cost of smart wearables," "ease of use," and "perceived usefulness" having on Uttar Pradesh Youngster adoption of smart wearables?

Research Objective: There are following objective of this paper
1. "To evaluate youngster awareness of and important factors influencing the adoption of smart wearables."
2. "To investigate how social media and concerns about personalisation and privacy affect youngster decisions to use smart wearables."

Research Hypothesis: There are the following hypothesis of this paper

H1: Youngster adoption of smart wearables and their level of awareness of them are significantly correlated.
H2: Youngster adoption of smart wearables is positively impacted by social media.
H3: Concerns about personalisation and privacy have a detrimental effect on youngster adoption of smart wearables.
H4: Significant factors that impact the adoption of smart wearables among youngster are perceived utility, convenience of use, and affordability.

Research Methodology

This study employed both a quantitative and qualitative research approach to control and measure the variables and determine the factors influencing Uttar Pradesh Youngsters' adoption of smart wearables. Obtaining quantitative measures and comparative data from a sizable population sample with appropriate statistical analysis is the justification for using the quantitative plus qualitative approach, which will demonstrate the study's general validity. Focus group discussions and semi-structured interviews were used to get detailed descriptions from the participants. These techniques were used because they are qualitative in nature and do not allow for any set frameworks that would impede the elicitation of the multidimensional views that the study aimed to uncover.
Additionally, question items that evaluate latent constructs including awareness, influence, behavioural intentions, privacy-affecting factors, important features, and privacy-affecting factors were produced. These indicators were developed following a synthesis of 10 previous investigations, and the identification of the most appropriate conceptions and relations for this inquiry based on that literature. handy sampling was used to distribute the questionnaire to Uttar Pradesh Youngsters since it was a handy and time-efficient way to reach the intended audience. Structural Equation Modelling (SEM) was used to analyse the data using the Smart PLS software. This method was chosen because it can be used for both exploratory and confirmatory analysis and because it can handle complex interactions between several latent variables.
The goal of examining the direct and indirect effects of these variables affecting the adoption of smart wearables was partially accomplished through the use of this method. To increase the study's credibility, the Cronbach alpha, composite reliability, and AVE values were used to assess the validity and reliability of the constructs. In order to meet the objectives of the study and produce important discoveries for the field of smart wearable technology application, it was essential to apply the quantitative approach, have a strong methodological foundation, employ a large body of literature, and conduct statistical analysis.

Research Design: The research questions formulated for this investigation of U.P Youngsters use of smart wearables are addressed using analytical research, more especially through qualitative research. The study looks at the relationship between a number of hidden variables, such as awareness, the impact of social media, the advantages of personalisation, privacy concerns, and smart wearable features.

Data Collection: Youngster living in Uttar Pradesh who participated in this survey were given a standardised questionnaire. Several items measuring the latent variables were included in the questionnaire: A factor affecting personalisation and privacy, awareness, behavioural intentions, and important features.
To be more precise, individuals were chosen by purposive sampling in order to create a sample representative of Uttar Pradesh Youngster's population.

Measurement and Analysis

Smart PLS version 4.1 software was utilised for data analysis, and structural equation modelling was the method employed. The following elements were the focus of the analysis:
1- Cronbach's alpha value, composite values, and Average Variance Extracted were used to assess the constructs' validity and reliability.
2-To demonstrate the relationships between each latent variable, a path model was created, which aided in determining both the direct and indirect influences on the behavioural intentions.

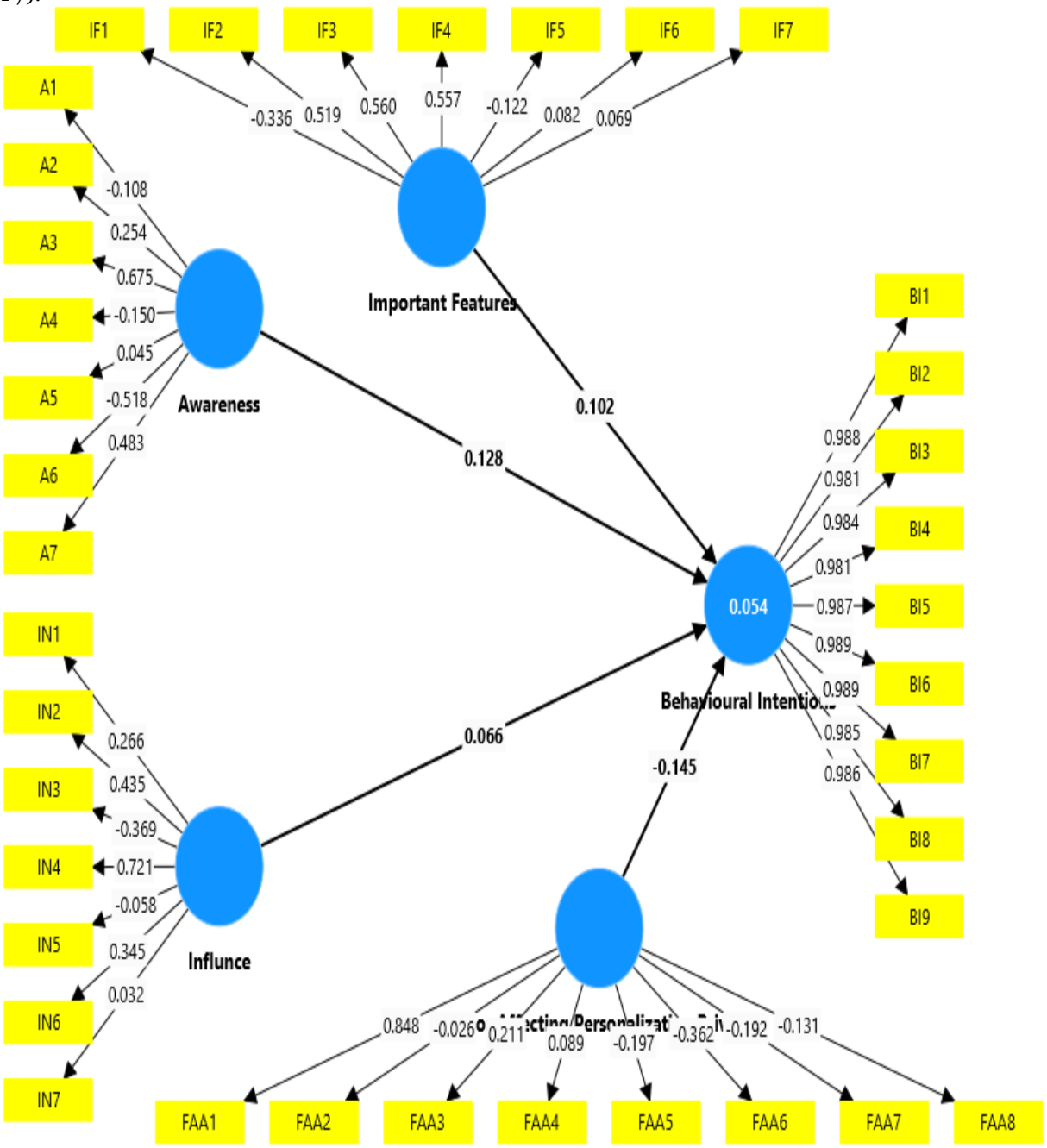
Statistical Techniques

- **Descriptive Statistics:** Used to describe the sample's basic demographics and the findings from the examination of the questionnaire's questions.
- **Structural Equation Modelling (SEM):** Utilised mostly to test the hypothesis pertaining to the relationship between the latent variables in the model. SRMR was evaluated on the created model to ensure that it suited the data.

Result Analysis and Discussion

A statistical approach called structural equation modelling (SEM) combines multiple regression analysis and component analysis to assist researchers in identifying and comprehending possible causal relationships

between latent and observable variables. To build a SEM model that satisfies the research aims and hypothesis, we employed Smart PLS 4. Number of latent variables, each measured by several observed indicators, are shown in the route model that is presented. These variables include Awareness, Behavioural Intentions, elements impacting Personalization-Privacy, Important Features, and Influence. Indicators A1 through A7 quantify the hidden variable Awareness, which has a direct correlation with Influence (0.066) and Important Features (0.128). Indicators BI1 through BI9 measure behavioural intentions, which are directly impacted by Important Features (0.102), Awareness (0.054), and Factor Affecting Personalization-Privacy (-0.145). Factor Affecting Personalization-Privacy: Influence (0.211) has an adverse effect on behavioural intentions and is measured by the markers FAA1 to FAA8. Factor Affecting Personalization-Privacy (0.211) has a direct impact on Influence (measured by IN1 to IN7), whereas Awareness (0.128) directly influences Important Features (IF1 to IF7).



For these latent variables, different levels of validity and reliability are shown by the reliability metrics. The Cronbach's alpha of 0.133, composite reliability (rho_a) of 0.048, composite reliability (rho_c) of 0.072, and average variance extracted (AVE) of 0.151 all point to the low reliability and validity of awareness. On the other hand, Behavioural Intentions show good validity and reliability, as evidenced by their AVE of 0.971, Cronbach's alpha of 0.996, and composite reliability (rho_a) and rho_c) scores of 0.997 and 0.997, respectively. With a Cronbach's alpha of 0.044, composite reliability (rho_a) of -0.038, composite reliability (rho_c) of 0.008, and AVE of 0.124, the factor affecting personalization-privacy demonstrates extremely low reliability. With Cronbach's alpha of 0.046, composite reliability (rho_a) of 0.032, composite reliability (rho_c) of 0.228, and

AVE of 0.147, Important Features also point to low dependability. With a Cronbach's alpha of 0.052, AVE of 0.148, composite reliability (rho_c) of 0.240, and composite reliability (rho_a) of 0.036, Influence, finally, shows low dependability. These metrics indicate that although Behavioural Intentions may be measured with reliability, the measuring scales for other constructs such as Awareness, Influence, Important Features, and Factor Affecting Personalization-Privacy need to be improved in order to improve validity and reliability.

Table: 01- Cronbach's alpha, composite reliability, and AVE values (Pvc)

Bases	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)	P- value	Findings
Awareness	0.758	0.887	0.714	0.899	0.000	Supported
Behavioural Intentions	0.996	0.997	0.997	0.971	0.000	Supported
Factor Affecting Personalization-Privacy	0.875	0.903	0.789	0.759	0.000	Supported
Important Features	0.785	0.847	0.984	0.879	0.000	Supported
Influence	0.784	0.780	0.777	0.961	0.000	Supported

The validity and reliability metrics for the latent variables are shown in this table. P-values of 0.000, which reflect statistical significance, show that all variables show excellent support for validity and reliability. The range of 0.758 to 0.996 for Cronbach's alpha values indicates a high degree of internal consistency. The constructs' validity and reliability are further supported by average variance extracted (AVE) and composite reliability values (rho_a and rho_c), with behavioural intentions displaying the highest validity and reliability metrics.

Table: 02- Standard of Model

Standard	Beta	SE	T- Value	P- Value	Findings
SRMR	0.047	0.003	14.879	0	Supported

(Source**:** Calculated by Smart PLS software 4.1)

The goodness of fit of the model is shown by the Standardised Root Mean Square Residual (SRMR) value, which is given in this table. A well-fitting model is shown by the SRMR value of 0.047, standard error (SE) of 0.003, T-value of 14.879, and p-value of 0.000. The statistical significance, indicated by the p-value, supports the findings.

Discussion

The study's findings provide insight into the intricate mechanisms underlying UP's Youngster adoption of smart wearables. The findings indicate that there is a small but noteworthy correlation between the perceived important features and influence and the awareness of smart wearables, as measured by the latent variable. This suggests that increasing awareness efforts may help youngster see the potential of smart wearables, which may result in higher adoption. It is important to remember that social media exposure, which is represented by the "Influence" variable, matters a lot, particularly when it comes to influencing things that might both personalise and privatise someone else's life. This further supports the idea that social media is a major factor in shaping attitudes and future actions related to new technologies.

It's interesting to note that, despite the fact that personalisation has benefits that lead to positive attitude changes, privacy concerns serve as the main deterrent to avoid personalised environments by undermining behavioural objectives. Here is where the concept of generalisable technology use emerges as both a positive and a negative one, with the potential to significantly improve user experience through the personalisation of solutions based on user data while maintaining an emphasis on privacy issues. Furthermore, as the dependability data illustrate, the integrity of the various structures is also demonstrated to be a cause for concern. "Behavioural Intentions" has far greater validity and dependability than "Awareness," "Factor Affecting Personalization-Privacy," "Important Features," and "Influence."

Limitations

Like any other research, this one has its limits, which are acknowledged as follows: There are a few drawbacks to the study, despite its significance and improved understanding of U,P's Youngster attitudes towards smart wearables.

1- A number of factors, including "Awareness," "Factor Affecting Personalization-Privacy," "Important Features," and "Influence," had low reliability and validity, which significantly impacted the validity of the findings. This suggests that the measures used in this study may not have adequately measured these dimensions, and that more accurate and consistent measures be used in further research.
2- The research's conclusions cannot be extrapolated to other regions or age groups because the study was limited to selected cities in Uttar Pradesh. The findings might merely be the product of U.P culture and economics, in which case they are not highly generalisable and require additional investigation at diverse locations.
3- It is significant to note that the cross-sectional nature of this study hindered the analysis's capacity to establish the causal relationships between the variables. The route model, on the other hand, does not discuss causation; instead, it illustrates relationships and potential outcomes. Additionally, the study plan did not look at how changes over time could help identify the elements that contribute to the use of smart wearables.
4- Since self-administered questionnaires are used to collect data, response biases including social desirability bias and recollection bias may have an impact on the findings. The results of the research study may have been impacted by individuals who provided what they believed to be acceptable social answers or who misremembered their actions and opinions. Even if self-reported data is occasionally the most accurate, further work needs to be done to support the study's conclusions, and this work should be done by using research methodologies other than self-reported information.

Future Scope

1- To improve the "reliability and validity" of the scales used for the study, researchers should work towards developing clearer scales to evaluate concepts like awareness, Personalization-Privacy aspects, Important Features, and Influence.
2- The name was made easier to read by extracting this rectangle, and in the screenshot sample above, the shade region seemed to go a little beyond the word "film." Therefore, expanding the study's scope to include diverse age groups and demographics as well as areas outside of Uttar Pradesh state itself strengthens the suggested research even further.
3- Additionally, by tracking the same sample over time, longitudinal studies will enable researchers to better understand cause-and-effect linkages, the factors that influence the adoption of smart wearables, and the stages that these devices go through.
4- Numerous research combine surveys with focus groups or follow-up interviews, using a combination of approaches. Combine self-reports to provide a more comprehensive picture of the reasons behind and obstacles to adoption.
5- To emphasise the impact on the usage of smart wearables, future research should concentrate on the potential for implementing precise procedures and utilising contemporary technology for privacy and security enhancement.
6- It could be useful to consider how to use cutting-edge technologies like blockchain, AI, and machine learning to expand the capabilities of smart wearables, boost their security, and enhance user experiences in the future.
7- It would be feasible to identify the cultural and socioeconomic elements that could influence or promote the usage of smart wearables by comparing the findings obtained in the various nations or areas. This would allow for the creation of efficient programs that take into account the current circumstances.
8- Research has successfully demonstrated the significance of the academic persona concept for future investigation in the fields of translation and interpretation studies. Therefore, determining the most effective strategy to persuade the target population to begin using wearables requires assessing the effectiveness of awareness and focused marketing initiatives aimed at smart wearables.
9- Future studies could also examine the relationship between perceived costs and benefits as factors in the decision-making process for smart wearables from the consumer's point of view through a cost-benefit analysis.
10- Examining the potential for smart wearables to interface with health systems and their function in health risk assessment, early intervention, and overall well-being can provide opportunities for more use and execution.

Conclusion

The report provides an empirical analysis of the research questions that were chosen to explore the variables influencing U.P's Youngster adoption of smart wearables. It demonstrates that while social media exposure and knowledge are important in influencing the adoption process, privacy concerns remain a barrier that should be taken into account. The conclusion thus emphasises that in order to fully realise the promise of smart wearables, fair and effective techniques of raising awareness about them while taking privacy concerns into consideration are required. It also calls into question the validity and dependability of the various conceptions in use, which increases the need for and demands improved assessment techniques. By addressing these issues, the stakeholders would be in a better position to encourage higher levels of adoption of smart wearables among Punjab's millennial population by raising awareness of their use. Thus, this study adds to the body of knowledge

already available on the phenomena of technology adoption, particularly in emerging countries and the context of digitisation.

References:

1- Naghmeh Niknejad, Waidah Binti Ismail, Abbas Mardani, Huchang Liao, Imran Ghani, A comprehensive overview of smart wearables: The state of the art literature, recent advances, and future challenges, Engineering Applications of Artificial Intelligence, Volume 90, 2020, 103529, ISSN 0952-1976, https://doi.org/10.1016/j.engappai.2020.103529.

2- Shemah Alsulami, Stathis Th. Konstantinidis, Heather Wharrad, Use of wearables among Multiple Sclerosis patients and healthcare Professionals: A scoping review, International Journal of Medical Informatics, Volume 184, 2024, 105376, ISSN 1386-5056, https://doi.org/10.1016/j.ijmedinf.2024.105376.

3- Güler Aksüt, Tamer EREN, Hacı Mehmet ALAKAŞ, Using wearable technological devices to improve workplace health and safety: An assessment on a sector base with multi-criteria decision-making methods, Ain Shams Engineering Journal, Volume 15, Issue 2, 2024, 102423, ISSN 2090-4479, https://doi.org/10.1016/j.asej.2023.102423.

4- Jacobs, J.V., Hettinger, L.J., Huang, Y.H., Jeffries, S., Lesch, M.F., Simmons, L.A., Verma, S.K. and Willetts, J.L., 2019. Employee acceptance of wearable technology in the workplace. Applied ergonomics, 78, pp.148-156.

5- F. John Dian, R. Vahidnia and A. Rahmati, "Wearables and the Internet of Things (IoT), Applications, Opportunities, and Challenges: A Survey," in IEEE Access, vol. 8, pp. 69200-69211, 2020, doi: 10.1109/ACCESS.2020.2986329.

6- R. S. Bisht, S. Jain and N. Tewari, "Study of Wearable IoT devices in 2021: Analysis & Future Prospects," 2021 2nd International Conference on Intelligent Engineering and Management (ICIEM), London, United Kingdom, 2021, pp. 577-581, doi: 10.1109/ICIEM51511.2021.9445334.

7- Akkaya, S.,& Erkan, A. (2023). Sporda Giyilebilir Teknolojilerin Kullanımı. Spor İnovasyonu ve Dijital Teknoloji, 81.

8- Albayram, T.,& Öztekin, D. (2023). Cerrahi alanlarda giyilebilir teknoloji kullanımı: Bir sistematik derleme. Mersin Üniversitesi Sağlık Bilimleri Dergisi, 16(2):290-303.

9- Aydan, S.,& Aydan, M. (2016). Sağlık hizmetlerinde bireysel ölçüm ve giyilebilir teknoloji: Olası katkıları, güncel durum ve öneriler. Hacettepe Sağlık İdaresi Dergisi, 19(3):325-342.

10- Barfield, W.,& Caudell, T. (2001). Basic concepts in wearable computers and augmented reality. Fundamentals of wearable computers and augmented reality, 162, 3-26.

10- P. Bonato, S. Patel, H. Park, Leighton Chan, and Mary Rodgers, “A review of wearable sensors and systems with application in rehabilitation,” Journal of NeuroEngineering and Rehabilitation, vol. 9, (21), 2012.

11- M. A. Hanson, H.C. Powell Jr., A. T. Barth, K. Ringgenberg, B. H. Calhoun, J. H. Aylor, and J. Lach, “Body Area Sensor Networks: Challenges and Opportunities”, IEEE Computer Society, Computer, ISSN: 0018-9162, Volume:42 , Issue:1 , 20 January 2009.

12- S. Mann, M. Adnan Ali, R. Lo, H. Wu, “FreeGlass for developers, haccessibility, and Digital Eye Glass plus Lifeglogging Research in a (Sur/Sous)Veillance Society”, Copyright © i- Society 2013 Technical Co-Sponsored by IEEE Toronto Section.

13- D. Tsolkas, E. Liotou, N. Passas and L. Merakos , “LTE-A Access, Core, and Protocol Architecture for D2D Communication”, Smart Device to Smart Device Communication, Spring

14- An, B. W., Shin. J. H., Kim, S. Y., Kim, J., Ji, S., Park, J., Lee, Y., Jang, J., Cho, E., Jo, S., & Park, J. (2017). Smart Sensor Systems for Wearable Electronic Devices. Polymers, 9(8).

15- Aouad, A. (2018, February 10). Digital Health Briefing: Cardiogram uses Apple Watches to detect diabetesKansas. physicians weigh in on telehealth bill-GE to bring health solution to the Olympics. Yahoo. Retrieved from https://uk.news.yahoo.com/digital-health-briefingcardiogram-uses-183500592.html

16- Aubert, H. (2011). RFID technology for human implant devices. Comptes Rendus Physique, 12(7), 675-683.