



THE ROLE OF SMARTWATCH USAGE IN ENHANCING HEALTH AWARENESS AND TRUST IN DAILY ACTIVITY REMINDER FUNCTIONS

Daffa Risq Mudhoffar^{a1}, Jaka Nugrahab^b, Fatima Zahra Ouariach^c, Soufiane Ouariach^d

^{a,b} Universitas Negeri Surabaya, Surabaya, Indonesia

^{c,d} Abdelmalek Essaadi University, Morocco, Morocco

ARTICLE INFO

Keywords:

Smartwatch, Generation Z, Health Awareness, Trust, Technology Acceptance Model, GSCA

Article History:

Received 27 October 2025

Accepted 16 December 2025

Available online 30 December 2025



<https://doi.org/10.26740/jpap.v13n3.p759-773>

ABSTRACT

Phenomenon/Issues: Modern office administration increasingly relies on digital tools to enhance task management. Smartwatches provide real-time reminders that support productivity. Generation Z shows growing interest, but their acceptance of this technology in office contexts is still rarely studied.

Purpose: The study aims to analyze the influence of health awareness and trust on smartwatch usage, specifically regarding reminder features used in administrative activities. The research applies the Technology Acceptance Model to understand how these factors affect.

Novelty: This study offers novelty by focusing on Generation Z in Surabaya, Indonesia, a group rarely examined in smartwatch adoption research. Previous studies mostly explored millennials or seniors in developed countries. This research highlights how smartwatches support both health awareness and trust in the context of administrative tasks.

Research Method: The research uses a quantitative method with convenience sampling. Respondent total of 50 Generation Z respondents from Surabaya, including students and office workers who use smartwatches, participated in the survey. Data were analyzed using variance-based Structural Equation Modeling (SEM).

Result: Trust significantly influences perceived usefulness and ease of use, while health awareness does not affect either. Perceived usefulness affects behavioral intention, but ease of use does not. These results indicate that Generation Z users are more likely to use smartwatch features and beneficial for productivity.

Research Contributions: The study offers practical insights for office administration by showing that smartwatch usage improves time discipline, task tracking, and user productivity. The findings support the integration of wearable technologies in administrative education.

INTRODUCTION

The development of information and communication technology (ICT) has brought about major changes in various aspects of life, including work, education, and health (Ratheeswari, 2018). The use of the internet and mobile devices has increased significantly; about 65.6% of the world's population has internet access, and 54.6% of them are mobile internet users (Gadge et al., 2024). These developments have encouraged people to integrate smart devices into their daily activities,

¹Correspondence: Daffa Rizqi Mudhoffar, Universitas Negeri Surabaya, Surabaya, Indonesia. Email daffa.21041@mhs.unesa.ac.id



including health management and task management (Olteanu et al., 2025). The application of digital technology in office work systems contributes to improving users' digital literacy and encourages more adaptive technology adoption in daily tasks (Nasori et al., 2025).

Smartwatches, as one form of wearable devices, are increasingly used by Generation Z, known for their adaptability to technological innovations (Ezurike, 2023). These devices offer various features that not only help manage class schedules and administrative tasks but also provide real-time health information (Maisha et al., 2023).

Indonesia has a growing number of smartwatch users. Surveys show that 39% of male respondents and 47% of female respondents use wearable tech every day, mainly for health reasons (Ridwan, 2023). Other surveys also explain from (Jakpat, 2023) revealed that 64% of respondents own wearable gadgets, and 58% plan to purchase one in the future. The survey, which involved 843 Generation Z respondents in Indonesia, also found that smartwatches are the most preferred wearable device, favored by 68% of participants. These findings indicate a growing awareness and adoption of wearable technology among Indonesian Gen Z, particularly for health related purposes. Generation Z is the dominant user group because they are more familiar with technology and have a high awareness of health (Cheung et al., 2020).

The awareness of the importance of maintaining health and regular activity is not yet fully in line with the perceived usefulness of smartwatch technology (Kheirkhahan et al., 2019). Students or office workers who are highly conscious of health do not necessarily consider activity monitoring and reminder features to be truly useful in supporting their lecture assignments and time management (Wardat & Akour, 2024). This discrepancy indicates a gap between the level of health awareness and perceived usefulness and perceived ease of use. This shows the need for further study on the extent to which health awareness contributes to shaping students' behavioral intentions to use smartwatches to support their academic activities (Chokphukhiao et al., 2024).

The problem arises from the aspect of trust in wearable devices. Some users are skeptical about the security and accuracy of the data collected by smartwatches, such as heart rate tracking, sleep patterns, or daily activities (Li et al., 2024). These concerns impact the low rate of sustained adoption, despite the devices' high potential in supporting well-being and work productivity (Saheb et al., 2022). Trust is a crucial factor in an administrative context, as both students and office workers who trust the features and security of smartwatches tend to use them consistently to manage schedules, track deadlines, monitor activity patterns, and enhance discipline and work effectiveness (Maisha et al., 2023). High trust in these devices encourages users to adopt them as primary tools for supporting administrative activities and managing daily work-related information (Al-Emran, 2021).

In the context of technology acceptance, the Technology Acceptance Model (TAM) explains that perceived usefulness (PU) and perceived ease of use (PEOU) influence users' behavioral intentions (Sulistyaningsih & Nugraha, 2022). The higher users' trust in smartwatch features, the greater their perception of its usefulness and ease of use (Gündüz et al., 2024). This study was conducted due to the limited research on the influence of health awareness and trust on smartwatch usage among Indonesian Generation Z, particularly in Surabaya. The novelty of this study lies in its focus on the local context and its quantitative approach to evaluating the factors within TAM that influence smartwatch adoption. This study is expected to contribute to the understanding of wearable technology adoption in developing countries, particularly Indonesia.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Information and Communication Technology (ICT)

Information and Communication Technology (ICT) is the main foundation in supporting digitalization in various sectors, including healthcare and office administration. ICT enables real-

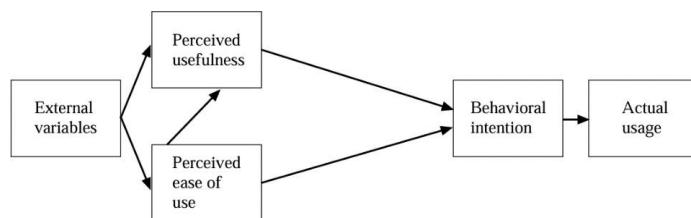
time information exchange, including through wearable devices such as smartwatches (Zhong et al., 2023). Generation Z, who are familiar with digital technology, utilize smartwatches to support a healthy lifestyle and enhance daily work efficiency, including in performing administrative tasks such as receiving notifications, monitoring schedules, and communicating quickly (Cheung et al., 2020). The use of this technology has been proven to increase participation in personal health management and accelerate administrative workflows that require responsiveness and timeliness (Saheb et al., 2022). Acceptance of these devices is greatly influenced by perceptions of their ease of use and benefits in daily activities (Chew et al., 2023).

Smartwatch

Smartwatches are multifunctional wearable devices that are not only used for personal needs but also support work productivity and health monitoring (Gadge et al., 2024). In an administrative context, smartwatches are an efficient tool for managing schedule reminders, receiving work messages, and managing task lists directly from the wrist (Maisha et al., 2023); (Arakawa et al., 2024). Support for apps like Google Calendar, Microsoft To Do, and Slack allows users to perform office work without relying entirely on desktop devices (Olteanu et al., 2025). In terms of health, smartwatches offer features such as heart rate monitoring, sleep quality tracking, stress levels, and blood oxygen levels, which are highly relevant for administrative workers prone to mental stress and sedentary lifestyles (Kheirkhahan et al., 2019). Chau et al., (2019) showed that the use of reminder features in smartwatches by healthcare workers helped reduce task neglect and improve service quality in the workplace. These functions also support self-monitoring and early detection of health risks (Al-Emran, 2021).

Smartwatches also enhance the implementation of remote healthcare systems, particularly through integration with health apps (Gündüz et al., 2024). However, these devices have limitations such as battery life, reliance on connectivity, accuracy of certain data, and relatively high prices (Arifah & Juniarti, 2021). literature review contains a critical review of the existing literature that supports the major themes discussed in this article. This sub-chapter should be able to conclude that the topic in this article was chosen based on a careful and in-depth literature review. In the text, citation refers to the APA pattern (www.apastyle.org). Citations should be written with the help of reference software (Mendeley, End Note, Zotero, etc.).

Technology Acceptance Model (TAM)



Source: Davis & Venkatesh, (1996)
Figure 1. Konsep Technology Acceptance Model

The Technology Acceptance Model (TAM) is used to explain user adoption behavior toward technology, which is influenced by perceived usefulness and perceived ease of use (Davis, 1989). In the context of smartwatches, perceived usefulness reflects users' belief that the device can improve work efficiency and health management. Meanwhile, perceived ease of use emphasizes that the device can be used without excessive effort. This model is highly relevant for Generation Z, who are known to be

open to new technology as long as it is perceived as beneficial and easy to operate (Ezurike, 2023). In administrative work, smartwatches can be well-received if they contribute meaningfully to work effectiveness and user comfort (Maisha et al., 2023). Research by Dzakiyyah & Nugraha, (2023) shows that perceived usefulness and perceived ease of use significantly influence behavioral intention, in line with the TAM framework used in this study. Therefore, TAM provides a strong theoretical foundation for assessing how wearable technology like smartwatches is adopted in the context of work and healthy lifestyles.

Health Awareness (HA)

Health Awareness (HA) refers to individuals' awareness of the importance of maintaining health and their tendency to seek and use technologies that can assist in health monitoring (Gadge et al., 2024). The awareness of health makes individuals more appreciative of the health features offered by smartwatches, such as monitoring physical activity, heart rate, and other health indicators (Ezurike, 2023). The use of smartwatches can also provide additional benefits in the context of office administration, particularly in supporting a more balanced work-life style through reminders for activities, breaks, or light movements when sitting too long in front of a computer (Cheung et al., 2020). Therefore, highly conscious individuals seek easy-to-use technology to support a healthy lifestyle (Gündüz et al., 2024). Within the TAM framework, this indicates that perceptions of the benefits and ease of use of smartwatches will increase along with high health awareness, both to support personal well-being and administrative work effectiveness. Therefore, the hypotheses proposed are:

H1: There is a significant positive influence between Health Awareness (HA) and Perceived Usefulness (PU) of smartwatches.

H2: There is a significant positive influence between Health Awareness (HA) and Perceived Ease of Use (PEOU) of smartwatches.

Trust (TR)

Trust in the context of technology refers to the extent to which users believe that a device is reliable, secure, and provides the expected benefits (Moakofhi et al., 2019). This trust encompasses aspects of data security, the accuracy of information provided by smartwatches, and the belief that the device can truly assist in health monitoring (Gündüz et al., 2024). Trust can increase users' chances of benefiting from the technology. The use of technology from untrusted parties can have a negative impact on users (Beldad & Hegner, 2018). In the administrative workplace, trust in the accuracy of schedules and notifications from smartwatches also affects the effectiveness of daily tasks, as users heavily rely on system synchronization to avoid delays and work errors (Maisha et al., 2023). Therefore, trust in the ability of smartwatches to maintain personal data security is an important factor for users who work in information systems or office jobs that are sensitive to privacy. Consumer trust is a crucial factor in technology adoption and helps build a strong relationship between technology and users (Legi & Saerang, 2020). Trust reflects consumers' expectations that the personal data and information they provide to the system will be protected, not misused, or traded (Kelly & Palaniappan, 2023). Trust not only reinforces the perception of benefits but also influences long-term decisions regarding device usage. Based on this description, the following hypothesis is proposed:

H3: There is a significant positive influence between trust and perceived usefulness (PU) of smartwatches.

H4: There is a significant positive influence between Trust and Behavioral Intention (BI) to use smartwatches.

Perceived Usefulness (PU)

Perceived Usefulness (PU) refers to the extent to which a person believes that using a technology will improve their performance or provide meaningful benefits (Davis & Venkatesh, 1996). Smartwatches in the PU variable reflect the extent to which users feel that smartwatches can help them monitor their health, increase physical activity, and support a healthy lifestyle (Ezurike, 2023). In the workplace, smartwatches are also considered useful in helping users stay organized, manage meeting schedules, and filter important notifications in real time (Maisha et al., 2023). The ability of smartwatches to provide instant notifications and relevant tracking data supports the effectiveness of administrative tasks that rely on time and coordination. This reinforces the perception that smartwatches provide benefits not only for health but also for improving daily work efficiency. Based on the above, the hypothesis proposed is:

H5: There is a significant positive influence between Perceived Usefulness (PU) and Behavioral Intention (BI) to use smartwatches.

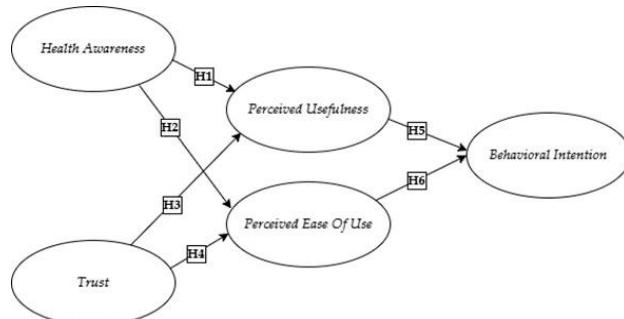
Perceived Ease of Use (PEOU)

Perceived Ease of Use (PEOU) refers to the extent to which an individual believes that using a technology will be easy and require minimal effort (Davis, 1989). In the context of smartwatches, PEOU reflects the perception that the device is easy to use, has an intuitive interface, and does not require advanced technical skills to operate (Cheung et al., 2020). In the administrative workplace, where high efficiency is demanded, ease of use is key to ensuring users do not feel overwhelmed by complex tools. The ease of using smartwatches, with features such as reminders, task managers, and automatic synchronization with work applications, enhances user comfort in managing daily activities (Saheb et al., 2022). In fact, the user-friendly design offered by smartwatches today makes them a suitable technological solution for Generation Z, who value practicality in supporting productivity and work health. Based on this understanding, the hypothesis proposed is:

H6: There is a significant positive influence between Perceived Ease of Use (PEOU) and Behavioral Intention (BI) to use smartwatches.

METHOD

This study uses a quantitative approach with an explanatory research type that focuses on the questions “why” and “how,” with the aim of identifying and providing evidence and deeper understanding of previously unresolved issues (Sari et al., 2022). The model used in this study is the Technology Acceptance Model (TAM) to explain and predict user acceptance of information technology, including wearable technology such as smartwatches (Arifah & Juniarti, 2021). This study uses three endogenous variables of TAM, namely perceived usefulness, perceived ease of use, and behavioral intention, as well as two exogenous variables, namely health awareness and trust.



Source: Processed By Researcher, 2025
Figure 2. Structural Model Research

The data was obtained using several instruments, namely:

- a. Primary data, which is data obtained directly from the source by the data collector (Soegiyono, 2020).
- b. Questionnaire for Generation Z respondents who are office workers and students to evaluate their perceptions and satisfaction with the use of the product.
- c. Secondary data, which is data that refers to sources that provide data indirectly, for example through other people or documents (Soegiyono, 2020).

This study used convenience sampling as a non-probability method, whereby research participants were selected based on their availability to participate as respondents. Convenience sampling technique was used because of its efficiency despite its limitations in terms of generalizability (Stratton, 2021). The research subjects were Generation Z individuals in Surabaya, East Java, Indonesia, who were students and office workers who used smartwatches in their daily activities. This research uses inferential methods in data analysis to gain a deeper understanding of the relationship between the variables studied. The researcher used Structural Equation Modeling Generalized Structural Component Analysis (SEM-GSCA) with the help of GSCA Pro software to analyze the data, because Structural Equation Modeling (SEM) is specifically designed to test structural models involving latent variables (Hwang et al., 2024). GSCA, as a variance-based SEM approach, is more flexible in processing non-parametric data (Hamid & Anwar, 2019). The GSCA method used in this study does not require normal distribution and remains effective even with limited sample sizes (Ngatno, 2019). GSCA has an advantage in explaining the causal relationships between constructs even with small samples (Fan et al., 2016)

RESULTS AND DISCUSSIONS

This study distributed questionnaires to 50 respondents via Google Forms using a five-point Likert scale. The Likert scale was chosen because of its ease in capturing respondents' opinions quantitatively (Joshi et al., 2015). All questionnaires were successfully returned and completed. The questionnaire return rate in this study reached 100%, with the respondent profiles as shown in the table.

Table 1.
Respondent Profile

Category	Subcategory	Number of Respondents	Percentage (%)
Age	20-28	50	100%
Usage Time	< 1 year	43	86%
Usage Time	> 1 year	7	14%
Gender	Male	28	56%
Gender	Female	22	44%
Occupation	Student University	38	76%
Occupation	Employed	12	24%

Source: Processed By Researcher, 2025

Assessing Measurement Model

Table 2.
 Indicators of Loading on Components

Indicator	HA	TR	PEOU	PU	BI
HA1	0.702	0.275	0.313	0.336	0.267
HA2	0.832	0.625	0.468	0.421	0.442
HA3	0.704	0.504	0.45	0.35	0.206
HA4	0.751	0.737	0.609	0.533	0.525
HA5	0.771	0.467	0.309	0.203	0.187
TR1	0.452	0.805	0.58	0.563	0.542
TR2	0.516	0.694	0.509	0.511	0.343
TR3	0.679	0.859	0.554	0.444	0.471
TR4	0.6	0.755	0.501	0.323	0.422
TR5	0.591	0.856	0.7	0.542	0.608
PEOU1	0.57	0.741	0.876	0.679	0.641
PEOU2	0.371	0.584	0.859	0.747	0.636
PEOU3	0.532	0.665	0.873	0.689	0.675
PEOU4	0.49	0.603	0.897	0.793	0.736
PEOU5	0.51	0.578	0.875	0.737	0.686
PU1	0.42	0.501	0.729	0.779	0.628
PU2	0.296	0.367	0.688	0.783	0.657
PU3	0.522	0.62	0.717	0.887	0.773
PU4	0.413	0.505	0.639	0.837	0.669
PU5	0.364	0.542	0.674	0.872	0.794
BI1	0.415	0.561	0.728	0.786	0.883
BI2	0.276	0.521	0.686	0.772	0.849
BI3	0.454	0.535	0.627	0.735	0.851
BI4	0.366	0.532	0.62	0.673	0.858

Source: Processed By Researcher, 2025

Based on the test results, all indicators in the model have a loading value ≥ 0.5 , thus meeting the convergent validity requirements as stated (Hair et al., 2014); (Chin & Newsted, 1998). The highest loading value comes from indicator HA2 (0.832) in the Health Awareness variable, and the lowest from indicator BI5 (0.559) in the Behavioral Intention variable, which is still acceptable. No indicators need to be removed as all are valid as stated (Gefen, 2005). Therefore, this model is suitable for further structural analysis.

Table 3.
 Construct Quality Measures (Reliability of Indicators)

	HA	TR	PEOU	PU	BI
PVE	0.568	0.634	0.767	0.694	0.655
Alpha	0.808	0.857	0.925	0.89	0.864
Rho	0.867	0.896	0.943	0.919	0.903
Dimensionali	1.0	1.0	1.0	1.0	1.0

Source: Processed By Researcher, 2025

Based on Table 3, all variables (HA, TR, PEOU, PU, and BI) have a dimensionality value of 1.00, indicating that the indicators are unidimensional and consistent in measuring a single concept. The PVE values for all variables are ≥ 0.50 , and the Alpha and Rho values are > 0.70 , meeting the criteria as stated (Hair et al., 2014); (Ali et al., 2018). This model meets the criteria for convergent validity, internal consistency, and composite reliability.

Table 4.
Component Validity Assesment

Fornell Larcker	HA	TR	PEOU	PU	BI
Criterion values					
HA	0.753				
TR	0.698	0.796			
PEOU	0.574	0.735	0.876		
PU	0.493	0.621	0.826	0.833	
BI	0.439	0.621	0.768	0.851	0.809

Source: Processed By Researcher, 2025

The Fornell-Larcker test results show that the square root of the AVE for each variable is greater than the correlation between variables, indicating that discriminant validity has been met (Fornell & Larcker, David, 1981). The HTMT values between variables are generally ≤ 0.90 , in line with the recommended threshold (Ali et al., 2018), although there are two pairs of variables (PEOU–PU and PU–BI) that slightly exceed the conservative threshold. However, according to Henseler et al., (2015), this minor violation does not invalidate the overall model validity. Therefore, the model remains valid and can proceed to the analysis of inter-variable relationships.

Table 5.
Assesment Of Component Correlation

VIF (Structural model)	HA	TR	PEOU	PU	BI
HA	0	0	1.948	1.948	0
TR	0	0	1.948	1.948	0
PEOU	0	0	0	0	3.14
PU	0	0	0	0	3.14
BI	0	0	0	0	0

Source: Processed By Researcher, 2025

Based on the guidelines of Hair et al., (2014), the ideal VIF value is < 5 to avoid multicollinearity. The analysis results show that all VIF values in the model are in the range of 1.948–3.14, which means that there are no symptoms of multicollinearity. Thus, the model is declared stable and feasible to proceed to the next stage of analysis.

Table 6.
 R Square

HA	TR	PEOU	PU	BI
0,0	0,0	0.548	0.393	0.737

Source: Processed By Researcher, 2025

The results show that the PEOU variable has an R^2 of 0.548 (54.8%), PU of 0.393 (39.3%), and BI of 0.737 (73.7%), which means that most of the variation in these three variables can be explained by the variables in the model. Meanwhile, the HA and TR variables have an R^2 of 0.0 because they act as independent variables. Overall, the model shows sufficient predictive power and is worthy of further analysis in a structural model.

Assesing Structural Model

Table 7.
 Structural Model Fit Measure

FIT	AFIT	FITs	FITm	GFI	SRMR	OPE	OPEs	OPEm
0.609	0.591	0.336	0.664	0.965	0.095	0.412	0.741	0.346

Source: Processed By Researcher, 2025

The research model has A FIT value of 0.609 indicates that the model explains 60.9% of the total variation in the data, while an AFIT value of 0.591 indicates a similar value after taking into account the complexity of the model (Joseph et al., 2022). FIT values of 0.336 indicate that 33.6% of the variation is explained by the model structure, and FITm values of 0.664 indicate that 66.4% of the variation in the measurement model is successfully explained. According to Hwang et al., (2024), a model is considered acceptable if $GFI \geq 0.93$ and $SRMR \leq 0.08$ for samples >100 . The results show a GFI of 0.965 (met), but an SRMR of 0.095 (not met). This means that the model generally has good fit based on GFI, but SRMR indicates some slight mismatch in the structural model.

Table 8.
 Path Coefficients

	Estimate	SE	95%CI (L)	95%CI (U)	Explanation
HA→PEOU	0.119	0.259	-0.343	0.713	H1 Rejected
TR→PEOU	0.652	0.223	0.178	1.044	H2 Accepted
HA→PU	0.117	0.234	-0.3	0.502	H3 Rejected
TR→PU	0.54	0.199	0.203	0.944	H4 Accepted
PEOU→BI	0.206	0.161	-0.127	0.494	H5 Rejected
PU→BI	0.681	0.137	0.417	0.93	H6 Accepted

Source: Processed By Researcher, 2025

Based on Table 8, of the six hypotheses tested, only three were significant. Referring to (Hwang et al., 2024), significance is determined from confidence intervals that do not include zero. The three rejected hypotheses are the influence of Health Awareness (HA) on Perceived Ease of Use (PEOU) and Perceived Usefulness (PU), as well as the influence of PEOU on Behavioral Intention (BI), as all of them have confidence intervals that include zero. Conversely, Trust (TR) was found to have a significant effect on PEOU and PU, and PU had a significant effect on BI. These results confirm the important role of Trust and Perceived Usefulness in shaping the intention to use smartwatches among Generation Z.

The Influence of Health Awareness on Perceived Usefulness

This study shows that Health Awareness does not have a significant effect on Perceived Usefulness. Although theoretically features such as heart rate, stress, and daily activity trackers on smartwatches are very useful for administrative workers (Ekiz et al., 2019; Gadge et al., 2024; Cheung et al., 2020), in reality, Generation Z users do not necessarily consider smartwatches useful simply because they are highly health conscious. These results are inconsistent with the findings of Gadge et al. (2024) and Gündüz et al. (2024), but align with the research of Yang et al. (2022) and Chuah et al. (2016), which suggest that health-conscious users may already be using other methods or tools to maintain their health. The loading values of the HA indicators are high (e.g., HA2 = 0.832), but perceived usefulness is more determined by functional benefits (PU3 = 0.887). Interviews also revealed that respondents doubted the accuracy of health features, so they did not consider them truly beneficial.

The Influence of Health Awareness on Perceived Ease of Use

The results show that Health Awareness also has no significant effect on Perceived Ease of Use. Although smartwatches are designed to simplify health monitoring Ekiz et al., (2019) the perception of ease does not automatically arise from health awareness. This finding does not support Gündüz et al., (2024) and Cheung et al., (2020), but is consistent with Li et al., (2024) and Andriany, (2024), who emphasize that technical factors such as design and user experience are more influential. Although the HA indicator is strong, the PEOU variable is shaped by technical indicators such as PEOU4 (0.897). Respondents complained about the small screen size and the need for synchronization with mobile phones, which reduced the perception of ease of use.

The Influence of Trust on Perceived Ease of Use

Unlike Health Awareness, Trust significantly influences Perceived Ease of Use. Trust in the system, including data security and feature reliability, makes users feel comfortable operating the smartwatch (Wardat & Akour, 2024); (Moakofhi et al., 2019); (Gündüz et al., 2024). The TR3 indicator (0.859) indicates high trust, and PEOU4 (0.897) reflects a strong perception of ease. Interviews support these findings, with respondents feeling that notification and reminder features facilitate work and daily activities, even though the small screen is not considered a barrier.

The Influence of Trust on Perceived Usefulness

The research results indicate that Trust also significantly influences Perceived Usefulness. Trust in the functionality and accuracy of features such as task notifications and work schedule reminders enhances the perceived usefulness of smartwatches (Maisha et al., 2023); (Olteanu et al., 2025); (Saheb et al., 2022). These results align with Gündüz et al., (2024), Moakofhi et al., (2019), and Wilson et al., (2021), who emphasize that trust is the primary determinant of perceived benefits. Research conducted by Pal et al., (2019) also explains that trust has a significant influence on user intent. The Trust (TR3 = 0.859) and PU (PU3 = 0.887) indicators demonstrate the strength of the construct measurement. Respondents perceive features such as work reminders and task trackers as highly beneficial and accurate, both in work and study contexts.

The Influence of Perceived Usefulness on Behavioral Intention

These findings indicate that Perceived Usefulness significantly influences Behavioral Intention. Smartwatches perceived as beneficial for example, for time management, task notifications, and physical activity encourage users to continue using them (Maisha et al., 2023). These results are consistent with Ezurike, (2023), Al-Emran, (2021), and Venkatesh & Bala, (2008), who state that perceived usefulness is a strong predictor of technology adoption and continued use. The high PU loading value (PU3 = 0.887) reinforces its association with the BI indicator (BI1 = 0.613). Respondents stated that smartwatches help them manage their time, focus, and productivity, thereby fostering the intention to continue using them.

The Influence of Perceived Ease of Use on Behavioral Intention

Conversely, Perceived Ease of Use does not significantly influence Behavioral Intention. Although smartwatches are considered easy to use (Arifah & Juniarti, 2021). This ease is insufficient to enhance behavioral intention. These results contradict Gündüz et al., (2024) and Cheung et al., (2020), but align with Saheb et al., (2022) and (Misra et al., 2023), who state that usage intention is more determined by actual benefits than operational ease. The PEOU indicator has a lower loading value, and respondents mentioned that even though smartwatches are simple, they still rarely use them if the benefits are not immediately felt. This indicates that functional effectiveness is more important than mere ease in forming behavioral intent.

CONCLUSION

This study concludes that Health Awareness does not significantly affect Perceived Usefulness and Perceived Ease of Use in the use of smartwatches by Generation Z. This shows that awareness of the importance of health does not necessarily shape perceptions of the benefits and ease of use of the device. Conversely, Trust has a significant positive effect on both, indicating that trust in features, data security, and comfort are key factors in shaping user perceptions. Therefore, Perceived Usefulness has a significant effect on Behavioral Intention, confirming that the tangible benefits of smartwatches encourage continued use. Meanwhile, Perceived Ease of Use does not have a significant effect on Behavioral Intention, because ease alone is not enough to shape the intention to use without any directly perceived benefits. This study has several limitations. First, the sampling technique used was convenience sampling, which limited the researchers' access to the entire population and did not allow direct supervision of the validity of the questionnaire completion by respondents. Second, the scope of the research object is limited to smartwatches as the only type of wearable technology analyzed, thus excluding other devices such as smartband or fitness trackers that also have similar functions in supporting health and productivity. Third, this study was only conducted on respondents from Generation Z, consisting of students and office workers in the Surabaya area, without specific details about the institutions where they study or work. Further research is recommended to expand the scope of the study and involve respondents of various ages to improve the generalization of the findings. The theoretical model can also be developed using other frameworks such as UTAUT or by adding moderating and intervening variables. Therefore, future research can explore additional variables such as attitude, security, supporting facilities, and intrinsic motivation. It is also recommended to include more detailed information regarding the respondents' work background and the smartwatch brands they use. section presents the study conclusions, study limitations, and recommendations for future research.

REFERENCES

Al-Emran, M. (2021). Evaluating the Use of Smartwatches for Learning Purposes through the Integration of the Technology Acceptance Model and Task-Technology Fit. *International Journal of Human-Computer Interaction*, 37(19), 1874–1882. <https://doi.org/10.1080/10447318.2021.1921481>

Ali, F., Rasoolimanesh, S. M., Sarstedt, M., Ringle, C. M., & Ryu, K. S. (2018). *An Assessment of the Use of Partial Least Squares Structural Equation Modeling (PLS-SEM) in Hospitality Research*. 30, 514–538.

Andriany, D. A. (2024). Pengaruh Perceived Usefulness Dan Perceived Ease Of Use Terhadap Peningkatan Self Awareness Kesehatan Mental Pengguna Aplikasi Kesehatan Mental Halodoc. *Ayan*, 15(1), 37–48.

Arakawa, R., Yakura, H., & Goel, M. (2024). *PrISM-Observer : Intervention Agent to Help Users Perform Everyday Procedures Sensed using a Smartwatch*. <https://doi.org/10.1145/3654777.3676350>

Arifah, I. D. C., & Juniarti, R. P. (2021). Interface Aesthetic, Perceived Value, Perceived Ease of Use, and Perceived Usefulness on Purchase Intention of Smartwatch Consumers. *Proceedings of the International Conference on Business and Engineering Management (ICONBEM 2021)*, 177, 25–33. <https://doi.org/10.2991/aebmr.k.210522.005>

Beldad, A. D., & Hegner, S. M. (2018). Expanding the Technology Acceptance Model with the Inclusion of Trust, Social Influence, and Health Valuation to Determine the Predictors of German Users' Willingness to Continue using a Fitness App: A Structural Equation Modeling Approach. *International Journal of Human-Computer Interaction*, 34(9), 882–893. <https://doi.org/10.1080/10447318.2017.1403220>

Chau, K. Y., Lam, M. H. S., Cheung, M. L., Tso, E. K. H., Flint, S. W., Broom, D. R., Tse, G., & Lee, K. Y. (2019). Smart technology for healthcare: Exploring the antecedents of adoption intention of healthcare wearable technology. *Health Psychology Research*, 7(1), 33–39. <https://doi.org/10.4081/hpr.2019.8099>

Cheung, M. L., Leung, W. K. S., & Chan, H. (2020). Driving healthcare wearable technology adoption for Generation Z consumers in Hong Kong. *Young Consumers*, 22(1), 10–27. <https://doi.org/10.1108/YC-04-2020-1123>

Chew, X. Y., Alharbi, R., Khaw, K. W., & Alnoor, A. (2023). How information technology influences organizational communication: the mediating role of organizational structure. *PSU Research Review*, 8(3), 633–647. <https://doi.org/10.1108/PRR-08-2021-0041>

Chin, W. W., & Newsted, P. R. (1998). The partial least squares approach to structural equation modeling. Modern methods for business research. *Statistical Strategies for Small Sample Research*, January 1998, 295–336. <http://books.google.com.sg/books?hl=en&lr=&id=EDZ5AgAAQBAJ&oi=fnd&pg=PA295&dq=chin+1998+PLS&ots=47qB7ro0np&sig=rihQBibvT6SLsj1H9txe9dX6Zk#v=onepage&q&f=false>

Chokphukhiao, C., Pattaranit, P., Tun, W. S. T., Masa, S., Leemananil, R., Natteerapong, N., Phetcharaburanin, J., Boonlue, S., Sunat, K., & Patramanon, R. (2024). Improving health awareness with real-time monitoring through a three-dimensional visualized digital health avatar. *Smart Health*, 34(July), 100522. <https://doi.org/10.1016/j.smhl.2024.100522>

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly: Management Information Systems*, 13(3), 319–339. <https://doi.org/10.2307/249008>

Davis, F. D., & Venkatesh, V. (1996). A critical assessment of potential measurement biases in the technology acceptance model: Three experiments. *International Journal of Human Computer Studies*, 45(1), 19–45. <https://doi.org/10.1006/ijhc.1996.0040>

Dzakiyyah, N., & Nugraha, J. (2023). UTAUT Model Analysis on E-Wallet Usage of Vocational School Students. *Jurnal Pendidikan Administrasi Perkantoran (JPAP)*, 11(2), 86–98. <https://doi.org/10.26740/jpap.v11n2.p86-98>

Ekiz, D., Said, Y., & Ersoy, C. (2019). *Long Short-Term Network Based Unobtrusive Perceived Workload Monitoring with Consumer Grade Smartwatches in the Wild*. 3841, 0–2.

Ezurike, N. (2023). Awareness and Adoption of Wearable Technology Amongst Gen-Z in Selected Fitness Centers in Lagos State, Nigeria. *International Journal of Management Technology*, 10(1), 20–37. <https://doi.org/10.37745/ijmt.2013/vol10n12037>

Fan, Y., Chen, J., Shirkey, G., John, R., Wu, S. R., Park, H., & Shao, C. (2016). Applications of structural equation modeling (SEM) in ecological studies: an updated review. *Ecological Processes*, 5(1). <https://doi.org/10.1186/s13717-016-0063-3>

Fornell, C., & Larcker, David, F. (1981). Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39–50. Gadge, S., Kasera, S., Yeravdekar, R., Singh, A., & Borlepawar, V. (2024). Role of fashion-consciousness, health-awareness and environmental concerns on millennials' usage of smartwatches. *International Journal of Pharmaceutical*

and *Healthcare Marketing*, 18(4), 675– 691. <https://doi.org/10.1108/IJPHM-06-2023-0047>

Gefen, D. (2005). *Communications of the Association for Information Systems A Practical Guide To Factorial Validity Using PLS-Graph : Tutorial And Annotated Example PLS-GRAPH : TUTORIAL AND ANNOTATED EXAMPLE*. 16(July).

Gündüz, N., Zaim, S., & Erzurumlu, Y. Ö. (2024). Investigating impact of health belief and trust on technology acceptance in smartwatch usage: Turkish senior adults case. *International Journal of Pharmaceutical and Healthcare Marketing*, 18(3), 499–520. <https://doi.org/10.1108/IJPHM-11-2022-0102>

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. . (2014). Multivariate Data Analysis. In *Neuromarketing in India: Understanding the Indian Consumer*. <https://doi.org/10.4324/9781351269360>

Hamid, S. R., & Anwar, M. S. (2019). Structural Equation Modeling (SEM) Berbasis Varian. In *Sustainability (Switzerland)* (Vol. 11, Issue 1). <http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005>

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>

Hwang, H., Cho, G., & Choo, H. (2024). GSCA Pro—Free Stand-Alone Software for Structural Equation Modeling. *Structural Equation Modeling*, 31(4), 696–711. <https://doi.org/10.1080/10705511.2023.2272294>

Jakpat. (2023). *Wearable Gadget Trends 2023: from Smartwatches to Smart Shoes*. <Https://Insight.Jakpat.Net/Wearable-Gadget-Trends-2023-from-Smartwatches-to-Smart-Shoes/>. <https://insight.jakpat.net/wearable-gadget-trends-2023-from-smartwatches-to-smart-shoes/>

Joseph, H. F., G., H. M. T., Christian, R. M., & Marko, S. (2022). A Primer on Partial Least Squares Structural Equation Modeling. *Long Range Planning*, 46(1–2), 184–185. <https://doi.org/10.1016/j.lrp.2013.01.002>

Joshi, A., Kale, S., Chandel, S., & Pal, D. (2015). Likert Scale: Explored and Explained. *British Journal of Applied Science & Technology*, 7(4), 396–403. <https://doi.org/10.9734/bjast/2015/14975>

Kelly, A. E., & Palaniappan, S. (2023). Using a technology acceptance model to determine factors influencing continued usage of mobile money service transactions in Ghana. *Journal of Innovation and Entrepreneurship*, 12(1). <https://doi.org/10.1186/s13731-023-00301-3>

Kheirkhahan, M., Nair, S., Davoudi, A., Rashidi, P., Wanigatunga, A. A., Corbett, D. B., Mendoza, T., Manini, T. M., & Ranka, S. (2019). A smartwatch-based framework for real-time and online assessment and mobility monitoring. *Journal of Biomedical Informatics*, 89(March 2018), 29–40. <https://doi.org/10.1016/j.jbi.2018.11.003>

Legi, D., & Saerang, R. T. (2020). the Analysis of Technology Acceptance Model (Tam) on Intentio To Use of E-Money in Manado (Study on: Gopay, Ovo, Dana). *Jurnal EMBA*, 8(4), 624–632.

Li, H., Xu, B., Sun, Z., Yan, R., Wu, Y., Zhang, H., Zhou, K., & Xu, L. (2024). The role of comfort, personality, and intention in smartwatch usage during sleep. *Humanities and Social Sciences Communications*, 11(1). <https://doi.org/10.1057/s41599-024-03214-y>

Maisha, K., Frei, M., Quintana, M., Chua, Y. X., Jain, R., & Miller, C. (2023). Utilizing wearable technology to characterize and facilitate occupant collaborations in flexible workspaces. *Journal of Physics: Conference Series*, 2600(14), 13–15. <https://doi.org/10.1088/1742-6596/2600/14/142009>

Misra, S., Adtani, R., Singh, Y., Singh, S., & Thakkar, D. (2023). Exploring the factors affecting behavioral intention to adopt wearable devices. *Clinical Epidemiology and Global Health*,

24(September), 101428. <https://doi.org/10.1016/j.cegh.2023.101428>

Moakofhi, M. K., Phiri, T. V., Leteane, O., & Bangomwa, E. (2019). Using Technology Acceptance Model to Predict Lecturers' Acceptance of Moodle: Case of Botswana University of Agriculture and Natural Resources. *Literacy Information and Computer Education Journal*, 10(1), 3103–3113. <https://doi.org/10.20533/licej.2040.2589.2019.0407>

Nasori, A., Aslindar, D. A., Triyono, B., & Puspasari, E. (2025). DIGI-ICE: Digital Office Administration for Building Modern office-Based MSMES. *Jurnal Pendidikan Administrasi Perkantoran (JPAP)*, 13, 496–503.

Ngatno. (2019). *Analisis data penelitian dengan program GeSCA*. 6.

Olteanu, A., Marian, C. G., & Pietraru, R. N. (2025). Smartwatch-Based Monitoring and Alert System for Factory Operators Using Public Cloud Services. *Applied Sciences (Switzerland)*, 15(5). <https://doi.org/10.3390/app15052806>

Pal, D., Funikul, S., & Papasratorn, B. (2019). Antecedents of Trust and the Continuance Intention in IoT-Based Smart Products: The Case of Consumer Wearables. *IEEE Access*, 7, 184160–184171. <https://doi.org/10.1109/ACCESS.2019.2960467>

Ratheeswari, K. (2018). Information Communication Technology in Education: Bringing Innovation in Classroom. *Ganeshman Darpan*, 8(1), 96–110. <https://doi.org/10.3126/gd.v8i1.57335>

Ridwan, P. P. (2023). *Statistik Pengguna Wearable Tech di Indonesia*. <https://goodstats.id/article/statistik-pengguna-wearable-tech-di-indonesia-QbR6l?utm>

Saheb, T., Cabanillas, F. J. L., & Higueras, E. (2022). The risks and benefits of Internet of Things (IoT) and their influence on smartwatch use. *Spanish Journal of Marketing - ESIC*, 26(3), 309–324. <https://doi.org/10.1108/SJME-07-2021-0129>

Sari, M., Rachman, H., Juli Astuti, N., Win Afgani, M., & Abdullah Siroj, R. (2022). Explanatory Survey dalam Metode Penelitian Deskriptif Kuantitatif. *Jurnal Pendidikan Sains Dan Komputer*, 3(01), 10–16. <https://doi.org/10.47709/jpsk.v3i01.1953>

Soegiyono. (2020). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*.

Stratton, S. J. (2021). Population Research: Convenience Sampling Strategies. *Prehospital and Disaster Medicine*, 36(4), 373–374. <https://doi.org/10.1017/S1049023X21000649>

Sulistyaningsih, I., & Nugraha, J. (2022). Analisis Penerimaan Pengguna Platform Pembelajaran Virtual Learning Unesa (Vinesa) Menggunakan Task Technology Fit (TTF) Dan Technology Acceptance Model (TAM) Di Masa Pandemi COVID-19. *Jurnal Pendidikan Administrasi Perkantoran (JPAP)*, 10(1), 107–123. <https://doi.org/10.26740/jpap.v10n1.p107-123>

Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences*, 39(2), 273–315. <https://doi.org/10.1111/j.1540-5915.2008.00192.x>

Wardat, S., & Akour, M. (2024). Adoption of smart watches as wearable technology in TESOL education among university students. *Smart Learning Environments*, 11(1). <https://doi.org/10.1186/s40561-024-00323-8>

Wilson, N., Keni, K., & Tan, P. H. P. (2021). The role of perceived usefulness and perceived ease-of- use toward satisfaction and trust which influence computer consumers' loyalty in china. *Gadjah Mada International Journal of Business*, 23(3), 262–294. <https://doi.org/10.22146/gamajib.32106>

Zhong, S., Shen, X., Shen, W., & Xin, C. (2023). Assessing the impact of ICT adoption on residents' self-rated health: evidence from China. *Kybernetes*, 52(9), 3161–3177. <https://doi.org/10.1108/K-12-2021-1243>

INFORMATION ABOUT THE AUTHORS

Daffa Risq Mudhoffar	: Universitas Negeri Surabaya, daffa.21041@mhs.unesa.ac.id	Surabaya,	Indonesia,
Jaka Nugraha	: Universitas Negeri Surabaya, jakanugraha@unesa.ac.id	Surabaya,	Indonesia,
Fatimah Zahra Ouariach	: Abdelmalek Essaadi University, fatimazahra.ouariach@etu.uae.ac.ma	Morocco,	Morocco,
Soufiane Ouariach	: Abdelmalek Essaadi University, soufian.ouariach@etu.uae.ac.ma	Morocco,	Morocco,

