# Unveiling Millennials' Motivations to Purchase Smartwatches

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## Abstract

**Purpose :** This study used the unified theory of acceptance and use of technology 2 (UTAUT2) model to try and find the antecedents to behavioral intention among millennials to buy smartwatches. We looked into the variables influencing millennials' intention to acquire smartwatches because of their growing propensity to embrace and use them.

**Methodology :** A mixed method approach was used, with a qualitative study assisting in the identification of significant elements and a quantitative investigation (using structural equation modeling) analyzing the links that were suggested. Using AMOS 29 and Process Macro, data from 240 valid responses were used to test the hypotheses.

**Findings :** We discovered that behavioral intention was significantly impacted by performance expectancy, social influence, brand enthusiasm, and hedonic motivation but not significantly by effort expectancy, price value, or facilitating conditions. Additionally, the moderating influence of both gender and educational attainment was investigated.

**Practical Implications :** Manufacturers were advised to concentrate on the functional advantages of their products in order to draw in millennial customers. Extra effort should be made to cultivate a favorable perception among the purchasers. To improve the perception of smartwatches, brand-building campaigns had to be implemented.

**Originality :** In contrast to earlier studies, the current work examined consumers' views of smartwatches by extending the UTAUT2 model.

*Keywords :* smartwatch, millennials, purchase intention, healthcare wearable

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With growing concern for personal fitness and health consciousness across the globe, smart wearable devices have seen exponential growth since their humble beginning in 2000. A variety of smart wearables are available, including jewelry, shoes, clothing, fitness bands, smartwatches, wireless headphones, and eyewear (Vandrico Inc., n.d.). Combining a smartphone with a health monitoring gadget can detect chronic illnesses and encourage a healthy way of life (Carey & Whelton, 2018). Their utility has been proven in measuring physiological processes such as heart rate, oxygen level, blood pressure, calories burnt, and

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tracking movement, and they also aid in sharing vital information with healthcare providers (King & Sarrafzadeh, 2018). Due to a rise in people who are concerned about their health after the pandemic, the smartwatch craze has been growing (Mandala et al., 2022). According to Jung et al. (2016), the wristwatch market has been highly competitive, with new entrants like Boat, Realme, and Noise and large firms like Apple, Google, Microsoft, Redmi, and Samsung. When buying a smartwatch, end consumers have an abundance of options, particularly for millennials. It is estimated that 253 million smartwatches will be sold globally by 2025 (Statista, 2022).

Prior studies have investigated the ways in which fashion, technology, and health affect the purchase decision using a variety of theories, including the UTAUT2 (Dash et al., 2022; Gao et al., 2015; Hsiao & Chen, 2018; Lunney et al., 2016), the theory of reasoned action (TRA), and the technology acceptance model (TAM). Beyond examining the UTAUT2 variables, authors have concentrated on researching the impact of brand passion on smartwatch purchases, which has emerged as a critical component in figuring out millennials' purchasing intentions. In this study, the UTAUT2 theory is used to investigate the factors influencing the purchase intention for smartwatches among millennials due to their relevance to tech-based products. Although the prior study has employed this methodology, there are not many pertinent studies that focus on millennials. Furthermore, the model's implementation in a developing market such as India is still in its infancy, and not many researchers have examined the moderating role that gender and educational attainment have on millennials' propensity to purchase smartwatches. The Indian population needs to be studied since it is more diverse than the populations of other emerging economies and South Asian countries (Shamsi et al., 2022). Positive word-of-mouth is a result of people's emotions, worries, and sentiments (Pahari et al., 2023; Verma et al., 2023). It has been noticed that innovative technology apps and web-based apps are not just a medium of information communication but a significant platform for linking people (Yadav, 2017). According to Arora et al. (2018) and Dash et al. (2023), millennials are no longer passive users of knowledge; instead, they are becoming the producers of it. According to Mahadevan and Joshi (2022), the services offered on the E-service platforms significantly meet the quality and privacy dimensions.

According to Chakraborty (2021), the most critical aspect that affects a customer's intention to purchase in modern management is availability and consistency. According to Jain (2022), the COVID-19 epidemic has forced consumers to utilize digital technologies in order to improve both their personal and professional lives. Following the pandemic, every corporation changed from being a capital-intensive sector to a high-tech supplier of business solutions (Bashir et al., 2016). The following research questions must, therefore, be answered in this study :

↳ **RQ1.** Are there any similarities between the UTAUT2 model's predictions of behavioral intention and millennials' purchase of smartwatches?

↳ **RQ2.** Does brand passion play a vital role in shaping the purchase intention of millennials?

↳ **RQ3.** Does the influence of behavioral intention predictors get tempered by factors like gender and educational attainment?

Based on their sophisticated motivations and expectancy levels, the study gives manufacturers, marketers, and policymakers a solid grasp of millennials and enables them to effectively encourage the young population's purchasing habits.

# Theoretical Background

### *Smartwatch*

Wearing a smartwatch is a simple, understated fashion statement. According to King et al. (2017), it is widely used for tracking fitness and health. According to King et al. (2017), there is a possible use case for smartwatch technology combined with biosensors to develop healthcare devices and apps. Smartwatches provide real-time results compared to other health monitoring devices (Doukas & Maglogiannis, 2012). People are using smartwatches more frequently because they make tracking fitness and health easier (Lunney et al., 2016). Customers may actively use a variety of offerings on their smartwatches whenever and wherever they want, thanks to the widespread use of mobile devices today. When it comes to app-based services, remote work, and Internet connectivity, the majority of Indian companies have made significant adjustments (Kurup & Jain, 2018).

### *Qualitative Study – Identification of Factors Influencing Behavioral Intention*

Using open-ended questions, a comprehensive study of smartwatch users was carried out to determine the factors impacting the consumption behavior of millennials. The structure of the study was framed through a detailed literature review of UTAUT2 and factors influencing the consumption behavior of millennials toward smartwatches. To boost the study's credibility, only those respondents who had been using smartwatches consistently for the past six months were incorporated. The respondents were asked to mention the factors that motivated them to purchase and use the smartwatches. The qualitative data were analyzed using the seven-step process (Colaizzi, 1978). We closely examined the replies in the first round to see what factors influenced millennials' propensity to acquire smartwatches. The next step revolved around the coding of language, text, and sentences used in the responses. After coding the text and sentences in the second stage, we meticulously interpreted their meaning in the third step. The next phase focused on filtering out similar content by repeating the entire process for each response. During the fifth stage, we concentrated all of our efforts on creating a more comprehensive description of the subject by combining all of the information. The sixth step was a cross-examination of the researcher-prepared documents, which ultimately resulted in the creation of an exhaustive draft of the phenomenon under investigation. We contacted the respondents in the seventh phase to get further information.

The entire process led to the identification of seven variables that shaped consumers' purchase intention. They are: performance expectancy, effort expectancy, social influence, facilitating conditions, price value, hedonic motivation, and brand passion. Specific scales to measure these variables were derived through further discussion with the expert panel and a detailed literature review.

### *UTAUT2 (Unified Theory of Acceptance and Use of Technology 2)*

Venkatesh et al. (2003) developed a technology acceptance framework called UTAUT2. The primary purpose of this model is to explain a user's intentions to use a particular information structure and the ensuing usage behavior (Lee, 2021). The first UTAUT model covered four fundamental constructs: (a) performance expectancy, (b) effort expectancy, (c) social influence, and (d) enabling conditions (Venkatesh et al., 2003). Three additional factors were added to UTAUT2: habit, hedonic motivation, and price value (Venkatesh et al., 2012). Subsequently, UTAUT2 has been employed in numerous studies to examine behavioral intentions related to various technologies or tech-related products (Beh et al., 2021; Chao, 2019).

# Literature Review and Hypotheses Development

## Performance Expectancy

Performance expectation (PE) is defined as the belief in the advantages of using technology to complete a task (Venkatesh et al., 2012). Alwan et al. (2016) stated that if consumers perceive technology as more valuable, their tendency to adopt it increases. Performance expectancy has been regarded as the strongest indicator to measure consumers' behavioral intentions (Venkatesh et al., 2003). According to Farooq et al. (2018) and Zailani et al. (2015), it is employed in gauging the uptake of technology in industry domains such as education. Hence, the following hypothesis is proposed:

✤ **H1 :** Performance expectation significantly impacts millennials' behavioral intention to purchase a smartwatch.

## Effort Expectancy

Effort expectancy (EE) is an individual's comfort level in adopting a technology (Venkatesh et al., 2003). In addition to functionality, a consumer's propensity for new technology is determined by the amount of work necessary to become accustomed to it (Tak & Panwar, 2017). It strongly measures consumer intention and inclination toward adopting a technology (Venkatesh et al., 2003). Research has indicated a noteworthy correlation between behavioral intention and effort anticipation with regard to net banking, app-based purchasing, and mobile learning (Chao, 2019; Tak & Panwar, 2017). Thus, the following hypothesis is proposed:

✤ **H2 :** A significant factor influencing millennials' behavioral intention to buy a smartwatch is effort expectancy.

## Social Influence

Social influence (SI) is the way that other people's opinions affect a person's capacity for making decisions (Venkatesh et al., 2003). The idea behind social influence is that people would desire to improve their connections with significant others by adopting their point of view (Hernandez et al., 2011). SI in contextual form can be explained as the significance of friends, family, and colleagues on a consumer's smart-wearable purchase intention. SI plays a crucial role in influencing consumers' intentions toward innovative products and services, particularly when it comes to technology that is relatively new to them (Alalwan et al., 2018). Thus, we propose the following hypothesis:

✤ **H3 :** SI significantly impacts millennials' behavioral intention to purchase a smartwatch.

## Facilitating Conditions

Facilitating conditions (FCs) imply users' perception regarding the availability of requisite infrastructure, knowledge, and assistance to shape a particular behavior (Venkatesh et al., 2003). Past studies have demonstrated that when supporting settings are improved, users' behavioral intention to adapt to technology rises (Li et al., 2019). Individuals who possess the necessary support network and technological expertise believe that utilizing technology would be simple and seamless (Chen & Chan, 2014). Thus, we propose the following hypothesis:

✤ **H4 :** FCs significantly impact millennials' behavioral intention to purchase a smartwatch.

### Price Value

Price value (PV) takes into account consumers' opinions of the new technology's usefulness as well as the financial costs associated with purchasing and utilizing it (Venkatesh et al., 2012). When the costs associated with technology outweigh the benefits, a user will see the price positively (Venkatesh et al., 2012). Thus, we propose the following hypothesis:

✤ **H5 :** PV significantly impacts millennials' behavioral intention to purchase a smartwatch.

### Hedonic Motivation

The happiness and excitement that come with utilizing new technology is known as hedonic motivation (HM) (Venkatesh et al., 2012). It has an impact on how people intend to use new technology (Farooq et al., 2018). The adoption of any wearable device is based on how happy and content a user feels when utilizing new technology (Yang et al., 2016). Thus, we propose the following hypothesis:

✤ **H6 :** HM significantly impacts millennials' behavioral intention to purchase a smartwatch.

### Brand Passion

Consumer choices are highly influenced by a brand, especially when the quality of the product is not clearly defined (Erdem & Keane, 1996). In addition to customer satisfaction and loyalty, brand relationship and emotional brand attachment have a significant impact on customers' buying intentions (Eastman et al., 1999; Vahdat et al., 2020). Subsequently, a high level of consumer-brand relationship is exhibited through brand passion, characterized by intense enthusiasm and desire (Pourazad et al., 2020). Thus, the following hypothesis is proposed:

✤ **H7 :** Brand passion (BP) significantly impacts millennials' behavioral intention to purchase a smartwatch.

### Gender as a Moderator

User adoption of technology is significantly influenced by their demographics (Chakraborty & Paul, 2023). Gender significantly shapes the attitudes and intentions of consumers, which in turn shapes their purchasing behavior (Chawla & Joshi, 2020). Studies have revealed that females are more comfortable using noncomplex technology-based products (Venkatesh et al., 2003), while men are more adaptable toward updated information technology and their usage (Sharma et al., 2020). A significant link has been found between gender and purchase intention; hence, we propose the following hypotheses:

✤ **H8 :** Gender moderates the relationship between (8a) PE, (8b) EE, (8c) SI, (8d) FC, (8e) PV, (8f) HM, and (8g) BP and behavioral intention.

### Qualification as a Moderator

The degree of education consumers have influences how likely they are to make a purchase (Chakraborty, Siddiqui, Siddiqui, Rana, & Dash, 2022). Consumption of the Internet and e-commerce is discouraged by low education (Liebermann & Stashevsky, 2002), whereas highly qualified individuals are more adept at adjusting to technological changes (Abed, 2021). Education qualification is crucial in boosting consumers' knowledge and

**Figure 1.** *Conceptual Model*
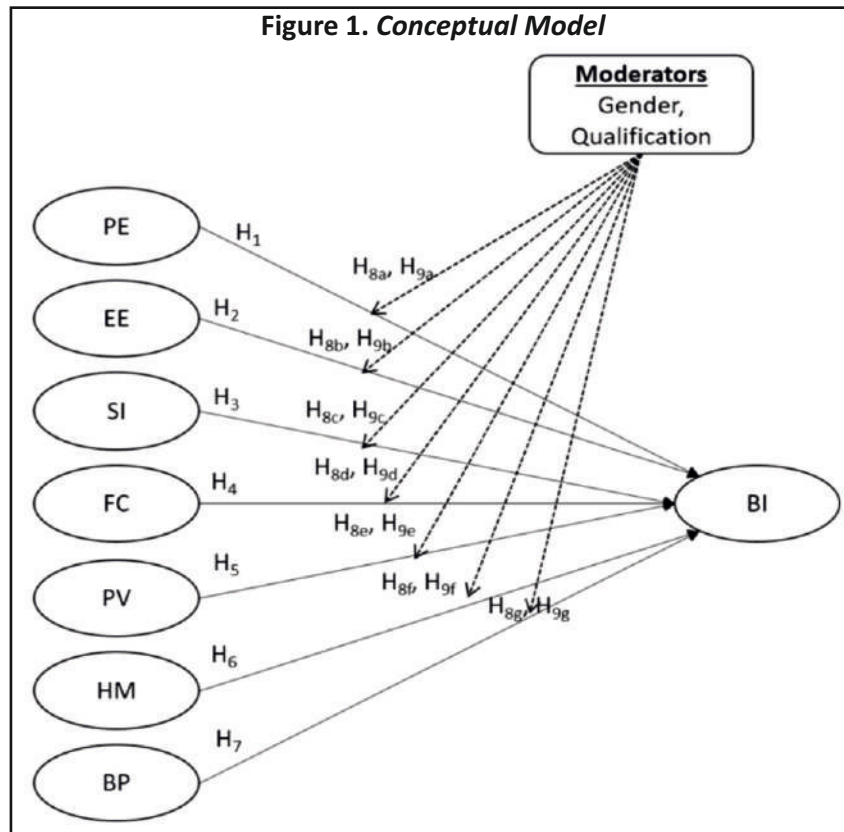
confidence, which increases their inclination toward the latest technological products. Trust, in addition to qualification, is an important mediator that impacts customer purchase intention (Kumar & Singh, 2022).

Hence, we propose the following hypotheses:

✤ **H9 :** Educational qualification moderates the relationship between (9a) PE, (9b) EE, (9c) SI, (9d) FC, (9e) PV, (9f) HM, and (9g) BP and behavioral intention.

Based on the aforementioned literature review, a conceptual model (Figure 1) has been put forth.

## Methodology

The present study is descriptive as it describes millennials' behavioral intention toward purchasing and using a smartwatch in an emerging economy. The study utilizes the UTAUT2 model with an additional variable, brand passion.

### Sampling and Data Collection

The millennials that participated in this survey ranged in age from 26 to 41 (as of 2022) (Bulsara & Vaghela, 2022). Millennials are the most tech-savvy generation to date and have a strong affinity for companies. They also have a populace that is less susceptible to advertising and more logical (Shamsi et al., 2022). Therefore, this study is made more fascinating by the millennial sample used in it.

**Table 1. *Demographic Profile of the Respondents***

| Demography | Frequency | Percentage |
|---|---|---|
| **Gender** | | |
| Male | 143 | 59.6% |
| Female | 97 | 40.4% |
| **Highest Qualification** | | |
| High School | 2 | 0.8% |
| Intermediate | 3 | 1.3% |
| Graduation | 55 | 22.9% |
| Post-Graduation | 170 | 70.8% |
| Doctorate | 10 | 4.2% |
| **Total** | 240 | 100% |

A structured questionnaire was designed to collect data with items adapted from previous research (Beh et al., 2021; Chao, 2019). Students, friends, and other acquaintances of the authors were asked to complete the questionnaire and ask their peers to do the same as part of the snowball sampling used to distribute it among the sample. The target was 350 responses; however, 302 questionnaires were returned, out of which 240 were complete and usable, ensuring demographic diversity too.

To provide a more accurate depiction of the population, we have made an effort to include a variety of individuals from various demographic backgrounds (Table 1). The sample has a slight bias, with 40.4% of the respondents being female and 59.6% of the respondents being male. Table 1 shows the qualifications of the respondents, ranging from high school to doctorate, while the majority are postgraduate.

## Data Analysis and Results

The data were screened using MS Excel and SPSS, followed by a demographic description, exploratory factor analysis, and Cronbach's α (for reliability). Subsequently, AMOS was used to conduct confirmatory factor analysis to model the hypothesized variables and assess the model's reliability and validity along with the model fit indices. Furthermore, a structural model was prepared using AMOS to draw the path diagram for the hypotheses, and estimates were obtained. Lastly, for testing the moderating relationships, Process Macros v4 was used.

The results of the Kaiser–Meyer–Olkin (KMO) test of sample adequacy are 0.8 (Table 2), which is a sufficient number to move on (Hair et al., 2010). Furthermore, Bartlett's test of sphericity is also performed, which returned a value of 0.00, which is within the threshold value of 0.05. Using EFA, factor loadings for every item are acquired. According to Stevens (1992), all items with loading more than 0.4 are regarded as affirmative, but low factor loading results in the removal of PE1, FC1, and BI.

### Common Method Bias

Since the data for reliable and independent variables were gathered from a single sample, there is a chance that the

**Table 2. *Sample Adequacy, Test of Sphericity, and Factor Loadings***

| | |
|---|---|
| Kaiser–Meyer–Olkin Measure of Sampling Adequacy | 0.8 |
| Bartlett's Test of Sphericity (Sig.) | 0.00 |

data may contain bias from the standard approach (Podsakoff et al., 2012). We used Harman's single-factor test to eliminate any doubt about this bias. According to Podsakoff et al. (2012), the total variance recovered by the first variable was 27.96%, which is below 50% and within an acceptable range.

### Confirmatory Factor Analysis : Measurement Model, Reliability, and Validity

Items with adequate factor loadings were considered for representing the respective latent variables, and a measurement model was created using SPSS AMOS. Furthermore, reliability and validity are also investigated using the values extracted from SPSS and measurement model estimates. Cronbach's α and composite reliability (CR), which yielded acceptable values for every construct (Table 3), are used to guarantee the internal consistency of the constructs (Hair et al., 2010). Table 3 shows that CR values meet the threshold criterion of above 0.7, average variance extracted above 0.5, and the square root of AVE more than the inter-item correlation. The values of CR and AVE confirm the convergent validity, while discriminant validity is confirmed by √AVE (Hair et al., 2010).

### Model Fit

For analysis, the present study utilizes SEM using SPSS AMOS. Table 4 presents the model fit indices, which demonstrate that all values are satisfactory, showing a good fit of the model. The normed fit index (NFI) and Tucker-Lewis index (TLI) values are acceptable since, if rounded, they are incredibly close to the threshold and are not higher than 0.9. A marginal fit is sometimes defined as an NFI score between 0.8 and 0.9 (Hair et al., 2010).

### Table 3. *Reliability & Validity*

|    | α | CR | AVE | BP | EE | PE | SI | HM | PV | FC | BI |
|----|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BP | 0.81 | 0.822 | 0.611 | **0.782** | | | | | | | |
| EE | 0.70 | 0.720 | 0.568 | 0.100 | **0.753** | | | | | | |
| PE | 0.65 | 0.694 | 0.496 | 0.221 | 0.388 | **0.704** | | | | | |
| SI | 0.87 | 0.875 | 0.700 | 0.507 | 0.316 | 0.303 | **0.837** | | | | |
| HM | 0.85 | 0.866 | 0.686 | 0.288 | 0.230 | 0.455 | 0.418 | **0.828** | | | |
| PV | 0.83 | 0.844 | 0.644 | 0.257 | 0.240 | 0.472 | 0.285 | 0.347 | **0.803** | | |
| FC | 0.71 | 0.735 | 0.608 | 0.381 | 0.719 | 0.615 | 0.480 | 0.517 | 0.300 | **0.779** | |
| BI | 0.65 | 0.701 | 0.686 | 0.626 | 0.100 | 0.380 | 0.425 | 0.374 | 0.244 | 0.252 | **0.828** |

### Table 4. *Model Fit Indices*

| Fit Index | CMIN/*DF* | GFI | TLI | NFI | CFI | RMSEA |
|-----------|-----------|-------|-------|-------|-------|--------|
| Value | 2.718 | 0.9 | 0.87 | 0.89 | 0.9 | 0.07 |
| Threshold | 3 | > 0.9 | > 0.9 | > 0.9 | > 0.9 | < 0.08 |

### Hypotheses Testing

The proposed routes are examined using SEM in AMOS. In order to determine the causal relationship, this study's hypotheses are developed. Therefore, Table 5 presents the consideration of regression weights. It is clear that PE, SI, BP, and HM significantly impact BI with a *p*-value less than 0.05. Thus, supporting H1, H3, H6, and H7.

**Table 5. *Hypotheses Testing (Path Estimates)***

| Path | Estimate | SE | CR | P | Remarks |
|---|---|---|---|---|---|
| BI <--- PE | 0.893 | 0.409 | 2.182 | 0.029 | H1 Accepted |
| BI <--- EE | 0.280 | 0.613 | 0.457 | 0.648 | H2 Rejected |
| BI <--- SI | 0.368 | 0.082 | 4.502 | *** | H3 Accepted |
| BI <--- FC | –.698 | 0.957 | –.730 | 0.466 | H4 Rejected |
| BI <--- PV | –.049 | 0.098 | –.499 | 0.617 | H5 Rejected |
| BI <--- HM | 0.342 | 0.170 | 2.008 | 0.045 | H6 Accepted |
| BI <--- BP | 0.242 | 0.111 | 2.193 | 0.028 | H7 Accepted |

However, H2, H4, and H5 are rejected with a *p*-value less than 0.05, indicating no significant impact of PV, FC, and EE on the BI of millennials purchasing a smartwatch in India.
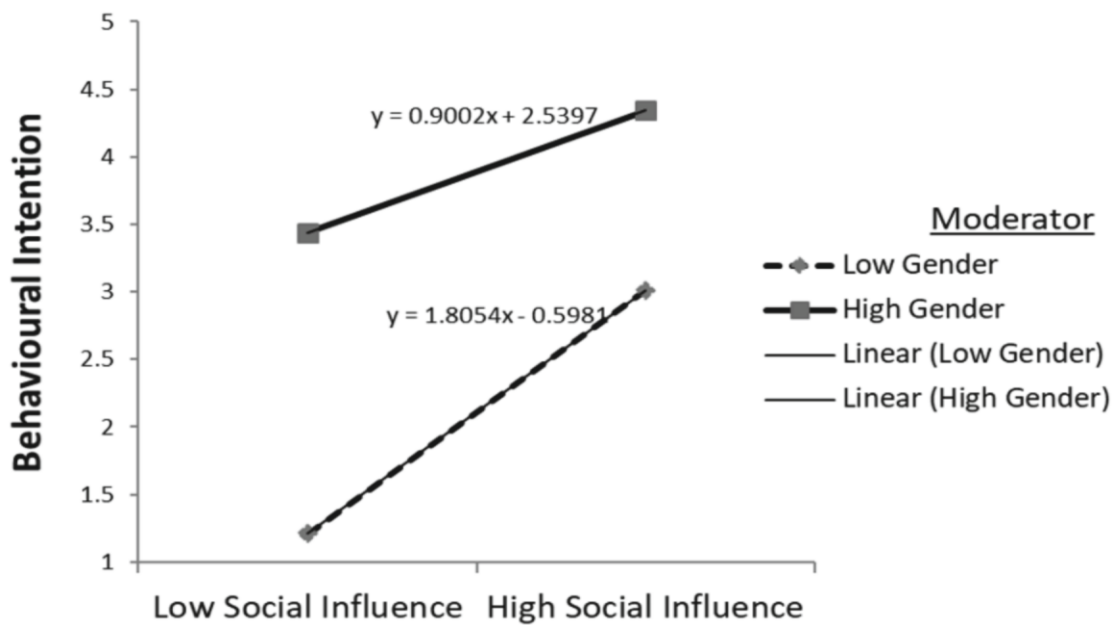
## *Moderation Analysis*

The effect of gender and educational attainment on the influence of PE, EE, FC, SI, HM, PV, and BP on BI is investigated using a moderation analysis carried out by the study (Table 6). The findings reveal that gender and educational qualification significantly moderate the impact of SI on BI (Table 6). This calls for acceptance of H8c and H9c, rejecting all the other moderation hypotheses. Figure 2 demonstrates that gender suppresses the positive relationship between SI and BI as the rise in the resulting variable diminishes with the rise in gender values. Additionally, Figure 3 shows that qualification scales up the positive relationship between SI and BI as the dependent variable rises sharply with higher qualification values. It states that the higher the qualification among millennials, the greater the influence of SI on BI.

**Table 6. *Results of Moderation Analysis***

**Moderator : Gender**

| Hypotheses | Path | | | β | SE | t | p | LLCI | ULCI | Moderation |
|---|---|---|---|---|---|---|---|---|---|---|
| H8a | PE | → | BI | 0.2515 | 0.1853 | 1.3569 | 0.1761 | –.1136 | 0.6166 | No |
| H8b | EE | → | BI | 0.1518 | 0.1413 | 1.0737 | 0.2840 | –.1267 | 0.4302 | No |
| H8c | SI | → | BI | –.2263 | 0.0799 | –2.8322 | 0.0050 | –.3837 | –.0689 | Yes |
| H8d | FC | → | BI | 0.2725 | 0.1404 | 1.9407 | 0.0535 | –.0041 | 0.5492 | No |
| H8e | PV | → | BI | 0.0485 | 0.0978 | 0.4960 | 0.6204 | –.1442 | 0.2413 | No |
| H8f | HM | → | BI | 0.0961 | 0.1083 | 0.8878 | 0.3756 | –.1172 | 0.3095 | No |
| H8g | BP | → | BI | .0150 | 0.0804 | 0.1865 | 0.8522 | –.1434 | 0.1734 | No |
| **Moderator : Educational Qualification** | | | | | | | | | | |
| H9a | PE | → | BI | 0.0657 | 0.1891 | .3476 | 0.7285 | –.3068 | 0.4382 | No |
| H9b | EE | → | BI | –.1008 | 0.1579 | –.6386 | 0.5237 | –.4118 | 0.2102 | No |
| H9c | SI | → | BI | 0.2097 | 0.0608 | 3.4509 | 0.0007 | 0.0900 | 0.3294 | Yes |
| H9d | FC | → | BI | 0.0756 | 0.1378 | .5489 | 0.5836 | –.1958 | 0.3471 | No |
| H9e | PV | → | BI | 0.0530 | 0.0817 | .6494 | 0.5167 | –.1079 | 0.2139 | No |
| H9f | HM | → | BI | –.0956 | 0.1079 | –.8856 | 0.3768 | –.3082 | 0.1171 | No |
| H9g | BP | → | BI | 0.0330 | 0.0640 | 0.5157 | 0.6066 | –.0931 | 0.1591 | No |

**Figure 2.** *Moderating Influence of Gender on the Relationship Between Social Influence and Behavioural Intention*



$y = 0.9002x + 2.5397$

$y = 1.8054x - 0.5981$

Moderator
- - ◆ - - Low Gender
—■— High Gender
——— Linear (Low Gender)
——— Linear (High Gender)

**Figure 3.** *Moderating Influence of Educational Qualification on the Relationship Between Social Influence and Behavioural Intention*



$y = 1.2594x + 1.8654$

$y = 0.4206x + 1.6146$

Moderator
- - ◆ - - Low Qualification
—■— High Qualification
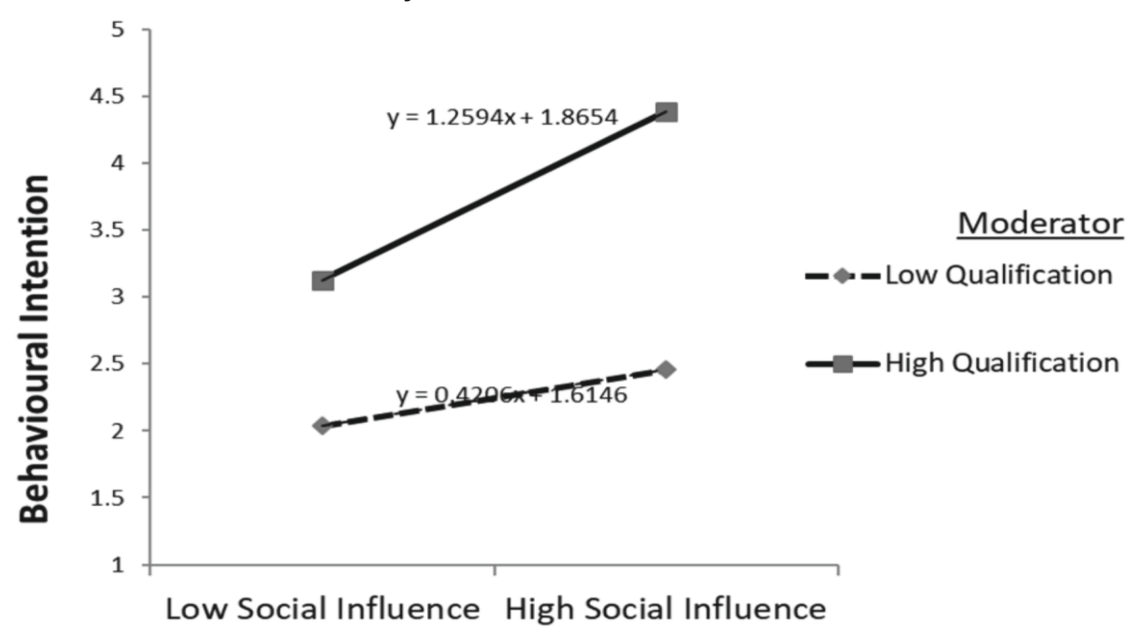
## Discussion

It is safe to conclude that smartwatches are gaining a lot of popularity amongst millennials in the Indian market. Our analysis reveals that for the millennial population of India, PE (H1), SI (H3), HM (H6), and BP (H7)

significantly elicit behavioral intention. Additionally, these results are corroborated by other studies conducted in other product categories. It is a crucial construct to shape customer inclination (Farooq et al., 2018; Venkatesh et al., 2003; Zailani et al., 2015) as a technology that is expected to be useful creates its adaptability (Alalwan et al., 2018). Similarly, acceptance of H3 can also be related to previous studies (Alalwan et al., 2018; Tarhini et al., 2014). The results of H3 indicate that millennials may be convinced to use smartwatches by their contented social reference groups. Social media networks and word-of-mouth can both have an impact on society. This is in line with the claims of earlier research (Alalwan et al., 2018; Beh et al., 2021; Gao et al., 2015). Likewise, previous studies also supported the role of BP in creating purchase intention (Gilal et al., 2021). This finding cannot be overlooked, as brand passion is not a much-studied concept with respect to purchase intention.

However, the UTAUT2 model is also contradicted by the rejection of the significant impact of EE (H2), FC (H4), and PV (H5) on the behavioral intention of millennials. These results contrast with the UTAUT2 model as well as other earlier research (Chen & Chan, 2014; Li et al., 2019; Tak & Panwar, 2017). However, the results are supported by Beh et al. (2021) for the price value. This could be because of differently priced smartwatch models available in the Indian market and due to the value orientation of millennials rather than price orientation. In fact, these contrary results depicted by the rejection of H2, H4, and H5 can be well understood with the unconventional behavioral traits of millennial consumers (Schawbel, 2015).

Based on the theoretical link as well as empirical results presented in previous studies, H8a to H8g are formulated to test the probable moderating influence of gender (Chawla & Joshi, 2020; Venkatesh et al., 2003), while H9a to H9g are intended to test the moderating influence of educational qualification (Abed, 2021; Chakraborty, Singu, & Patre, 2022). It is worth considering that gender and educational qualification are both found to be significantly moderating the relationship between social influence and the behavioral intention of millennials. This shows that millennial consumers are not affected differently by other variables of behavioral intention based on their gender or educational background. However, the impact of social influence gets weaker with higher gender values and strengthens with the rise in the qualification level of the millennials; whereas, the rise in qualification tends to associate people with more social classes, and the behavior is expected to move toward technical products or gadgets. The millennials with lower qualification levels are less affected by the influence of their social groups and are also relatively less expected to move toward technical products or gadgets.

## Implications

### Theoretical Implications

Researchers have utilized the UTAUT2 model for various tech products, but we found few studies applying it in the context of smartwatches. Previous studies have explored factors such as fashion, technology, and health concerns affecting the intention and consumption of smartwatches. However, we focus on the impact of brand passion, along with other antecedents as defined in the UTAUT2 model, on the purchase intention of smartwatches. The inclusion of brand passion also paves the way for extending the UTAUT2 model. However, only four antecedents specified in UTAUT2 significantly affect the smartwatch purchase intention. The remaining three, effort expectancy, facilitating conditions, and price value show no significant impact. So, our study creates an opportunity to discuss the feasibility of factors of the UTAUT2 model w.r.t different products and populations. Additionally, testing the moderation of gender and qualification also adds to the theoretical worth of the study as it expands the scope of discussion that can be initiated in the domain of the studied topic.

*Practical Implications*

The practical worth of this paper is that the findings offer noteworthy suggestions to manufacturers, marketers, and policymakers. First, the study suggests that manufacturers focus on the product's functional benefits as performance expectancy significantly impacts millennials' purchase intention. The manufacturers should not only work on ensuring the product's accurate functioning but also add new functional benefits to the product. Second, marketers should take note of factors like SI, HM, and BP. The opinion of reference groups in making a purchase decision is critical and noteworthy; hence, marketers can create a delightful experience for customers to enable positive word of mouth for their products.

Building strong brand relationships leading to passion will further assist marketers in generating much better market results. A brand that has created a solid and affirmative identity through distinctiveness in the minds of existing and potential customers will pave the way for a confirmed purchase of their smartwatch models. Marketers should also work on attaching hedonic utility to their products. Engaging in activities, events, and promotions that convey the feeling of joy and enjoyment would help marketers generate better purchase intention. Policymakers can provide rebates and/or subsidies to smartwatch manufacturers to enable the inclusion of added benefits into the product along with increasing its reporting accuracy. Skill development programs may be launched to upskill people in smartwatch manufacturing and servicing, which can contribute to overall productivity enhancement in the Indian smartwatch industry.

## Conclusion

Encouraging people to use a smartwatch is a good way in which everyone can self-monitor their health and fitness. Additionally, many illnesses that can take a chronic form can be controlled at their initial stages through smartwatch tracking. An integrated UTAUT2 model that includes PE, EE, SI, FC, HM, PV, and BP is used by us in this study. We have tried to validate the impact of these variables on the behavioral intention for the purchase of smartwatches among millennial consumers. The following variables have significantly impacted BI: PE, SI, BP, and HM; whereas, EE, PV, and FC do not significantly impact BIs. Furthermore, gender and educational qualification are found to be significant moderators in the relationship between SI and BI purchases.

## Limitations of the Study and Scope for Further Research

Every study leaves scope for further research. The survey was conducted online through Google Forms, which may have led to biased responses in comparison to the one-to-one collection of data. Moreover, our study is restricted to India due to the proximity and ease of data collection and, hence, cannot be generalized globally. Therefore, to demonstrate the exact relationships among the variables, studies at a global level are required. Furthermore, this is a cross-sectional study; hence, we could not validate the changes in behavior that may occur over time. In the future, longitudinal analysis can be conducted to minimize this limitation. Finally, our respondents were largely below the age group of 45 years. By taking into account responders from a more extensive age range in the future, this limitation can be reduced to a minimum. This might also have an impact on how some study variables relate to one another.

## Authors' Contribution

Dr. Mohd Salman Shamsi and Dr. Anuj Verma conceived the idea and developed the design to undertake the case study. Dr. Mohd Salman Shamsi and Dr. Anuj Verma extracted highly reputed research papers, filtered these based

on keywords, and generated concepts and codes relevant to the study design. Dr. Mohd Salman Shamsi, Dr. Anuj Verma, and Dr. Meenakshi Verma verified the methods and supervised the study. The interviews were conducted by Dr. Mohd Salman Shamsi, Dr. Anuj Verma, and Dr. Meenakshi Verma. Dr. Mohd Salman Shamsi and Dr. Anuj Verma wrote the manuscript in consultation with Dr. Meenakshi Verma.

## Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this manuscript.

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## References

Abed, S. S. (2021). Examining augmented reality adoption by consumers with highlights on gender and educational-level differences. *Review of International Business and Strategy, 31*(3), 397–415. https://doi.org/10.1108/RIBS-08-2020-0100

Alalwan, A. A., Dwivedi, Y. K., Rana, N. P., & Algharabat, R. (2018). Examining factors influencing Jordanian customers' intentions and adoption of internet banking: Extending UTAUT2 with risk. *Journal of Retailing and Consumer Services, 40*, 125–138. https://doi.org/10.1016/j.jretconser.2017.08.026

Arora, T., Agarwal, B., & Kumar, A. (2018). A study of millennials' preferences for social media advertising in Delhi NCR. *Indian Journal of Marketing, 48*(10), 34–51. https://doi.org/10.17010/ijom/2018/v48/i10/132334

Bashir, M., Yousaf, A., & Verma, R. (2016). Disruptive business model innovation: How a tech firm is changing the traditional taxi service industry. *Indian Journal of Marketing, 46*(4), 49–59. https://doi.org/10.17010/ijom/2016/v46/i4/90530

Beh, P. K., Ganesan, Y., Iranmanesh, M., & Foroughi, B. (2021). Using smartwatches for fitness and health monitoring: The UTAUT2 combined with threat appraisal as moderators. *Behaviour & Information Technology, 40*(3), 282–299. https://doi.org/10.1080/0144929X.2019.1685597

Bulsara, H. P., & Vaghela, P. S. (2022). Millennials' online purchase intention towards consumer electronics: Empirical evidence from India. *Indian Journal of Marketing, 52*(2), 53–70. https://doi.org/10.17010/ijom/2022/v52/i2/168154

Carey, R. M., & Whelton, P. K. (2018). Prevention, detection, evaluation, and management of high blood pressure in adults: Synopsis of the 2017 American College of Cardiology/American Heart Association Hypertension Guideline. *Annals of Internal Medicine, 168*(5), 351–358. https://doi.org/10.7326/M17-3203

Chakraborty, D. (2021). Factors influencing passengers' purchase intention towards app-cab services in metro cities of India: A study on smartphone users. *Indian Journal of Marketing, 51*(1), 41–54. https://doi.org/10.17010/10.17010/ijom/2021/v51/i1/156933

Chakraborty, D., & Paul, J. (2023). Healthcare apps' purchase intention: A consumption values perspective. *Technovation, 120*, 102481. https://doi.org/10.1016/j.technovation.2022.102481

Chakraborty, D., Siddiqui, A., Siddiqui, M., Rana, N. P., & Dash, G. (2022). Mobile payment apps filling value gaps: Integrating consumption values with initial trust and customer involvement. *Journal of Retailing and Consumer Services, 66*, 102946. https://doi.org/10.1016/j.jretconser.2022.102946

Chakraborty, D., Singu, H. B., & Patre, S. (2022). Fitness apps's purchase behaviour: Amalgamation of stimulus–organism–behaviour–consequence framework (S–O–B–C) and the innovation resistance theory (IRT). *Journal of Retailing and Consumer Services, 67*, 103033. https://doi.org/10.1016/j.jretconser.2022.103033

Chao, C.-M. (2019). Factors determining the behavioral intention to use mobile learning: An application and extension of the UTAUT model. *Frontiers in Psychology, 10*, Article 1652. https://doi.org/10.3389/fpsyg.2019.01652

Chawla, D., & Joshi, H. (2020). The moderating role of gender and age in the adoption of mobile wallet. *Foresight, 22*(4), 483–504. https://doi.org/10.1108/FS-11-2019-0094

Chen, K., & Chan, A. H. S. (2014). Gerontechnology acceptance by elderly Hong Kong Chinese: A senior technology acceptance model (STAM). *Ergonomics, 57*(5), 635–652. https://doi.org/10.1080/00140139.2014.895855

Colaizzi, P. F. (1978). Psychological research as a phenomenologist views it. In R. S. Valle & M. King (eds.), *Existential-phenomenological alternatives for psychology* (pp. 48–71). Oxford University Press.

Dash, G., Akmal, S., & Chakraborty, D. (2022). A study on adoption of e-health services: Developing an integrated framework in a multinational context. *Indian Journal of Marketing*, *52*(5), 25–40. https://doi.org/10.17010/ijom/2022/v52/i5/169415

Dash, G., Akmal, S., & Chakraborty, D. (2023). A study on adoption of mobile learning apps (MLA): Development of an integrated framework in a multinational context. *Indian Journal of Marketing*, *53*(5), 8–24. https://doi.org/10.17010/ijom/2023/v53/i5/172724

Doukas, C., & Maglogiannis, I. (2012). Bringing IoT and cloud computing towards pervasive healthcare. *2012 sixth international conference on innovative mobile and internet services in ubiquitous computing* (pp. 922–926). IEEE. https://doi.org/10.1109/IMIS.2012.26

Eastman, J. K., Goldsmith, R. E., & Flynn, L. R. (1999). Status consumption in consumer behavior: Scale development and validation. *Journal of Marketing Theory and Practice, 7*(3), 41–52. https://doi.org/10.1080/10696679.1999.11501839

Erdem, T., & Keane, M. P. (1996). Decision-making under uncertainty: Capturing dynamic brand choice processes in turbulent consumer goods markets. *Marketing Science, 15*(1), 1–20. https://doi.org/10.1287/mksc.15.1.1

Farooq, M. S., Salam, M., ur Rehman, S., Fayolle, A., Jaafar, N., & Ayupp, K. (2018). Impact of support from social network on entrepreneurial intention of fresh business graduates: A structural equation modelling approach. *Education + Training, 60*(4), 335–353. https://doi.org/10.1108/ET-06-2017-0092

Gao, Y., Li, H., & Luo, Y. (2015). An empirical study of wearable technology acceptance in healthcare. *Industrial Management & Data Systems, 115*(9), 1704–1723. https://doi.org/10.1108/IMDS-03-2015-0087

Gilal, F.G., Gilal, N. G., Gilal, R. G., Gon, Z., Gilal, W. G., & Tunio, M. N. (2021). The ties that bind: Do brand attachment and brand passion translate into consumer purchase intention? *Central European Management Journal, 29*(1), 14–38. https://doi.org/10.7206/cemj.2658-0845.39

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed). Pearson Prentice Hall.

Hernandez, B., Montaner, T., Sese, F. J., & Urquizu, P. (2011). The role of social motivations in e-learning: How do they affect usage and success of ICT interactive tools? *Computers in Human Behavior, 27*(6), 2224–2232. https://doi.org/10.1016/j.chb.2011.07.001

Hsiao, Y.-C., & Chen, C.-Y. (2018). Exploring individual, family, and extrafamilial factors associated with depression among elderly residents of care settings. *The International Journal of Aging and Human Development, 86*(3), 219–241. https://doi.org/10.1177/0091415017699938

Jain, R. (2022). Impact of the pandemic on consumer behavior and business strategy in India. *Indian Journal of Marketing, 52*(2), 23–33. https://doi.org/10.17010/ijom/2022/v52/i2/168152

Jung, Y., Kim, S., & Choi, B. (2016). Consumer valuation of the wearables: The case of smartwatches. *Computers in Human Behavior, 63*, 899–905. https://doi.org/10.1016/j.chb.2016.06.040

King, C. E., & Sarrafzadeh, M. (2018). A survey of smartwatches in remote health monitoring. *Journal of Healthcare Informatics Research, 2*, 1–24. https://doi.org/10.1007/s41666-017-0012-7

King, R. C., Villeneuve, E., White, R. J., Sherratt, R. S., Holderbaum, W., & Harwin, W. S. (2017). Application of data fusion techniques and technologies for wearable health monitoring. *Medical Engineering & Physics, 42*, 1–12. https://doi.org/10.1016/j.medengphy.2016.12.011

Kumar, N., & Singh, V. (2022). Shopping with voice assistant: Understanding consumer intention and the mediating role of trust. *Indian Journal of Marketing, 52*(8), 51–65. https://doi.org/10.17010/ijom/2022/v52/i8/171224

Kurup, A. J., & Jain, P. (2018). Effect of e-loyalty cues on repurchase behavioural intentions among online shoppers. *Indian Journal of Marketing, 48*(11), 7–22. https://doi.org/10.17010/ijom/2018/v48/i11/137982

Lee, E.-J. (2021). Impact of visual typicality on the adoption of wearables. *Journal of Consumer Behaviour, 20*(3), 762–775. https://doi.org/10.1002/cb.1904

Li, J., Ma, Q., Chan, A. HS., & Man, S. S. (2019). Health monitoring through wearable technologies for older adults: Smart wearables acceptance model. *Applied Ergonomics, 75*, 162–169. https://doi.org/10.1016/j.apergo.2018.10.006

Liebermann, Y., & Stashevsky, S. (2002). Perceived risks as barriers to Internet and e-commerce usage. *Qualitative Market Research, 5*(4), 291–300. https://doi.org/10.1108/13522750210443245

Lunney, A., Cunningham, N. R., & Eastin, M. S. (2016). Wearable fitness technology: A structural investigation into acceptance and perceived fitness outcomes. *Computers in Human Behavior, 65*, 114–120. https://doi.org/10.1016/j.chb.2016.08.007

Mahadevan, K., & Joshi, S. (2022). Impact of e-service quality dimensions on customer satisfaction and loyalty in online apparel shopping in India. *Indian Journal of Marketing, 52*(12), 20–38. https://doi.org/10.17010/ijom/2022/v52/i12/172560

Mandala, G. N., Verma, A., & Verma, M. (2022). Consumption patterns during the COVID-19 pandemic. *Journal of Information and Optimization Sciences, 43*(6), 1363–1373. https://doi.org/10.1080/02522667.2022.2122196

Pahari, S., Polisetty, A., Sharma, S., Jha, R., & Chakraborty, D. (2023). Adoption of AI in the banking industry: A case study on Indian banks. *Indian Journal of Marketing, 53*(3), 26–41. https://doi.org/10.17010/ijom/2023/v53/i3/172654

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63*, 539–569. https://doi.org/10.1146/annurev-psych-120710-100452

Pourazad, N., Stocchi, L., & Pare, V. (2020). The power of brand passion in sports apparel brands. *Journal of Product & Brand Management, 29*(5), 547–568. https://doi.org/10.1108/JPBM-12-2018-2164

Schawbel, D. (2015, January 20). 10 new findings about the millennial consumer. *Forbes.* https://www.forbes.com/sites/danschawbel/2015/01/20/10-new-findings-about-the-millennial-consumer/?sh=448d6f1a6c8f

Shamsi, M. S., Narula, S., & Sharma, A. (2022). Does environmental awareness via SNSS create sustainable consumption intention among the millennials? *Journal of Content, Community & Communication, 15*(8), 100–116.

Sharma, P., Gupta, S., & Kapoor, D. (2020). Digital marketing and consumer millennials: A comparative study of men, women, and transgender consumers' buying behaviour in Punjab. *Indian Journal of Marketing*, *50*(3), 47–57. https://doi.org/10.17010/ijom/2020/v50/i3/151029

Statista. (2022). *Wearable technology — Statistics & facts.* http://www.statista.com/topics/1556/wearable-technology

Stevens, J. P. (1992). *Applied multivariate statistics for the social sciences* (2nd ed.). Lawrence Erlbaum Associates, Inc.

Tak, P., & Panwar, S. (2017). Using UTAUT 2 model to predict mobile app based shopping: Evidences from India. *Journal of Indian Business Research, 9*(3), 248–264. https://doi.org/10.1108/JIBR-11-2016-0132

Tarhini, A., Hone, K., & Liu, X. (2014). Measuring the moderating effect of gender and age on e-learning acceptance in England: A structural equation modeling approach for an extended technology acceptance model. *Journal of Educational Computing Research*, *51*(2), 163–184. https://doi.org/10.2190/EC.51.2.b

Vahdat, A., Hafezniya, H., Jabarzadeh, Y., & Thaichon, P. (2020). Emotional brand attachment and attitude toward brand extension. *Services Marketing Quarterly, 41*(3), 236–255. https://doi.org/10.1080/15332969.2020.1786245

Vandrico Inc. (n.d.). *The wearables database.* https://vandrico.com/wearables

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425–478. https://doi.org/10.2307/30036540

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly, 36*(1), 157–178. https://doi.org/10.2307/41410412

Verma, A., Chakraborty, D., & Verma, M. (2023). Barriers of food delivery applications: A perspective from innovation resistance theory using mixed method. *Journal of Retailing and Consumer Services, 73*, 103369. https://doi.org/10.1016/j.jretconser.2023.103369

Yadav, M. (2017). Social media as a marketing tool: Opportunities and challenges. *Indian Journal of Marketing, 47*(3), 16–28. https://doi.org/10.17010/ijom/2017/v47/i3/111420

Yang, H., Yu, J., Zo, H., & Choi, M. (2016). User acceptance of wearable devices: An extended perspective of perceived value. *Telematics and Informatics, 33*(2), 256–269. https://doi.org/10.1016/j.tele.2015.08.007

Zailani, S., Iranmanesh, M., Nikbin, D., & Beng, J. K. C. (2015). Determinants of RFID adoption in Malaysia's healthcare industry: Occupational level as a moderator. *Journal of Medical Systems, 39*, Article 172. https://doi.org/10.1007/s10916-014-0172-4

# Appendix

**Appendix.** *List of Questionnaire Items*

| Construct | Cronbach's Alpha | Items | CFA Loadings | Source |
|---|---|---|---|---|
| **Effort Expectancy** | 0.70 | Learning how to use a smartwatch is easy for me *[EE1]*. | 0.60 | (Beh et al., 2021; |
| | | Smartwatches are easy to use *[EE2]*. | 0.763 | Chao, 2019) |
| | | It is easy for me to become skillful in using smartwatches *[EE3]*. | 0.624 | |
| **Performance Expectancy** | 0.65 | I find a valuable smartwatch for health and fitness monitoring in my daily life *[PE1]*. | (Dropped) | |
| | | Using a smartwatch connected to my phone helps me to keep track of all the essential notifications *[PE2]*. | 0.8 | |
| | | Using a smartwatch is trendy *[PE3]*. | 0.6 | |
| **Social Influence** | 0.87 | People who are important to me would think that I should use a smartwatch for health and fitness monitoring *[SI1]*. | 0.754 | (Beh et al., 2021) |
| | | People who influence me would think that I should use a smartwatch for health and fitness monitoring *[SI2]*. | 0.88 | |
| | | People whose opinions are valued by me would prefer that I should use a smartwatch for health & fitness monitoring *[SI3]*. | 0.86 | |
| **Facilitating Conditions** | 0.71 | I have the resources necessary to use a smartwatch for health and fitness monitoring *[FC1]*. | (Dropped) | |
| | | I know that it is necessary to use a smartwatch for health and fitness monitoring *[FC2]*. | 0.66 | |
| | | A smartwatch is compatible with other technologies I use *[FC3]*. | 0.63 | |
| | | I can get help from others when I have dificulties using a smartwatch for health and fitness monitoring *[FC4]*. | (Dropped) | |
| **Hedonic Motivation** | 0.85 | Using a smartwatch is fun *[HM1]*. | 0.85 | |
| | | Using a smartwatch is enjoyable *[HM2]*. | 0.86 | |
| | | I (would) feel contented in using a smartwatch *[HM3]*. | 0.75 | |
| **Price Value** | 0.83 | A smartwatch is reasonably priced *[PV1]*. | 0.71 | |
| | | A smartwatch is good value for money *[PV2]*. | 0.84 | |
| | | At the current price, a smartwatch is providing good value *[PV3]*. | 0.83 | |
| **Brand Passion** | 0.81 | I am passionate about certain brands *[BP1]*. | 0.61 | Self (Expert |
| | | I like to buy every product launched by my favorite brand *[BP2]*. | 0.84 | Discussion) |
| | | I am enthusiastic about every product of my beloved brand *[BP3]*. | 0.85 | |
| **Behavioral Intention** | 0.65 | To track my fitness and health, I would be willing to wear a smartwatch *[BI1]*. | (Dropped) | (Beh et al., 2021; Chao, 2019) |
| | | I would be willing to use a smartwatch to stay in trend *[BI2]*. | 0.73 | |
| | | I would be willing to wear a smartwatch in order to monitor my health and fitness *[BI3]*. | 0.70 | |
| | | I am planning to use a smartwatch in the future *[BI4]*. | 0.61 | |

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