

Influence of Brand Hearsay on Smart Health Wearable Purchase Intentions: The Mediating Roles of Brand Trust and Loyalty

Chantel MULLER

*North-West University
Hendrik van Eck Blvd., Vanderbijlpark, South Africa
chantel.muller@nwu.ac.za*

Re-an MÜLLER

*North-West University
Hendrik van Eck Blvd., Vanderbijlpark, South Africa
rean.muller@nwu.ac.za*

Gustavo Hermínio Salati Marcondes DE MORAES

*School of Applied Sciences, UNICAMP
353 Pitágoras Street Campinas, São Paulo Brazil
gustavosalati@gmail.com*

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Abstract

Health wearables are expected to reach \$80 billion in market value by 2025, indicating a significant growth trajectory and potential to revolutionize health management. These devices provide numerous benefits, including monitoring physical activity, tracking physiological symptoms, and promoting emotional well-being, which collectively contribute to transforming healthcare practices. However, to fully leverage these advancements, understanding consumer perceptions is vital. This study examines brand hearsay's impact on smart health wearables' purchase intentions among South African consumers, with a particular focus on how brand trust and loyalty mediate this relationship. The research involved a quantitative analysis of survey data collected from 487 adults aged 18 to 56 across all nine provinces in South Africa. The methodology included statistical techniques to assess the influence of brand hearsay on purchase intentions through the mediating variables of brand trust and loyalty. The findings reveal that brand trust plays a crucial role in shaping consumers' purchase intentions, with advertising and promotional activities exerting the most significant direct effect on brand trust. Although brand loyalty also influences purchase intentions, its impact is less pronounced than brand trust. Additionally, the direct effects of brand trust and brand loyalty on purchase intentions were not statistically significant. These insights highlight the importance of building and maintaining strong brand trust to enhance the likelihood of smart health wearable adoption. This research contributes valuable knowledge to the field of consumer behavior in the health wearable market. It provides practical implications for marketers seeking to boost consumer engagement and trust in South Africa.

Keywords

Brand Hearsay; Brand Loyalty; Brand Trust; Health Technology; Purchase Intentions; Smart Wearables.

Introduction

Recent projections indicate that the health wearables market will surpass \$80 billion by 2025 (Statista, 2024b). These advancements, which aggregate health data, have significantly enhanced their ability to promote health (Piwek et al., 2016). Fitness apps

and wearables now offer features like monitoring physical activity, providing tailored workout plans, and personalized nutrition and health regimens, all of which support fitness goals and encourage healthy behavior (Sun et al., 2021; Bao & Lee, 2024; Yen & Chiu, 2019). Additionally, these technologies are designed to improve physical, emotional, and psychological well-being. Psychological well-being involves managing and expressing feelings healthily, while social well-being pertains to the quality of relationships and interactions (Lamers et al., 2011). Current health wearables offer mood tracking, relaxation techniques, and mental health resources, and they facilitate social connections by monitoring interactions and activity (Fernandes et al., 2021; Bao & Lee, 2024; Kanstrup et al., 2020). Muller (2022) describes smart health wearables as body-attached devices that measure movement and fitness metrics, providing real-time feedback through smart devices. This category includes various devices such as clip-on pedometers, heart rate monitors, smart jewelry, fitness bands, smart clothing, and both activity-tracking and smartwatches.

The global growth of the smart health wearables market is justified by their extensive health benefits (Bao & Lee, 2024). Earwear devices are expected to lead in shipments, with over 347 million units projected for 2024, followed closely by smartwatches, with shipments forecasted to exceed 208 million units by 2028 (Statista, 2024b). Although consumers aged 18 to 34 dominate the wearable technology market, individuals aged 35 to 55 also represent a significant segment (Statista, 2024b). Numerous studies have explored the global adoption of smart wearables and the factors influencing purchase intentions (Adapa et al., 2018; Gupta et al., 2021; Huarng et al., 2022; Lee & Lee, 2020; Singh, 2023). However, research focusing on market-specific factors and the effects of brand hearsay, trust, and loyalty on consumer attitudes is limited (Asadi et al., 2019; Firman et al., 2021; Kamalasena & Sirisena, 2021; Kim et al., 2019; Park et al., 2016). Consumer perceptions are essential to understanding how to drive the health wearable market, as consumers must be intentional about purchasing the devices to generate demand. In this sense, Generation Y is a prominent audience, as they are the primary consumers of society (Statista, 2024b), fundamental to the success of health wearables in a developing country. Therefore, the target segment of this article is Millennial organic consumers in South Africa. Despite slower adoption, the South African consumer market is expected to be the next big market for smart health devices (Statista, 2024a).

This research aims to assess the impact of brand hearsay on smart health wearable purchase intentions through the mediating roles of brand trust and brand loyalty. Specifically, it examines whether brand loyalty mediates the effect of brand hearsay (including advertising, promotion, WOM, and eWOM) on purchase intentions and whether brand trust plays a similar mediating role.

Literature review

Smart health wearable purchase intentions were measured based on Ajzen's (Ajzen, 1991) theory of planned behavior, where behavioral intention was interpreted as a consumer's inclination to perform a specific behavior, such as purchasing and using a branded device to monitor their activity and health metrics. The consumer's loyalty towards and trust in their preferred brand is expected to influence this buying behavior. Brand loyalty is captured by a consumer's intention to purchase a product or

use the same brand again in the future, regardless of any existing effects and efforts to generate change from competitors (Chamie & Ikeda, 2015). The degree of trust a consumer has in the brand contributes to both brand loyalty and purchase intentions. The perception of trust by consumers is a culmination of several events over time, and it is defined as their perceptions of the company's competencies, such as ability, integrity, and benevolence, as well as their willingness or intention to rely on it (Mainardes & Cardoso, 2019). Several studies confirm the significant influence of brand trust and loyalty on purchase intentions (Firman et al., 2021; Kamalasena & Sirisena, 2021; Mainardes & Cardoso, 2019) as well as the influence of trust on loyalty (Huo et al., 2022; Mainardes & Cardoso, 2019).

During the pre-purchase stage, consumers encounter all sorts of communications related to a particular product or service brand (Kim et al., 2019). This study investigated brand-induced and consumer-generated communication. The first is advertising and promotion, which refers to direct communication with a company's existing and prospective customers about its offerings. Consumer-generated communication refers to word of mouth (WOM) and eWOM, which is the uncontrolled public spread of opinions about a specific brand's products or services, whether solicited or not. Many new and existing consumers use this informal advice to make informed purchase decisions.

Brand hearsay, as contextualized for this study, measured consumers' perceptions of their preferred smart health wearable band's advertising and promotion, their view of friends and family WOM opinions about such devices, as well as the perceived role that social network comments and reviews (eWOM) played in their device brand's products. The importance of brand hearsay has been established in the literature across contexts, finding that advertising and promotion, WOM and eWOM directly influence brand trust (Firman et al., 2021; Kamalasena & Sirisena, 2021; Kim et al., 2019; Mainardes & Cardoso, 2019; Rafqi Ilhamalimy & Ali, 2021) and purchase intentions (Firman et al., 2021; Kamalasena & Sirisena, 2021; Rafqi Ilhamalimy & Ali, 2021).

One contrary finding is that of Mainardes and Cardoso (Mainardes & Cardoso, 2019), a study suggesting no statistically significant influence of company-generated and user-generated communication on loyalty and subsequent in-store purchase intentions. Notably, a dearth of research investigated the influence of brand hearsay on brand loyalty and its mediating role in purchase intentions. One study found that eWOM significantly influences millennial (Generation Y) consumers' brand loyalty (Trivedi & Sama, 2021). Another study suggests the inverse role of the marked effect of brand loyalty in driving WOM (Karimi Alavijeh et al., 2018). In this section, the author provides the theoretical background, explaining what the state of the art in the field is. Significant and recent sources must be cited, and working definitions of the main concepts used in the paper shall be advanced. The literature review helps the author reveal the research gap and advance a new perspective or model.

Based on the theoretical framework and research objective, a conceptual integrative model was elaborated, which is presented in Figure 1. The model comprises six constructs and nine hypotheses around the factors influencing smart health wearable purchase intentions.

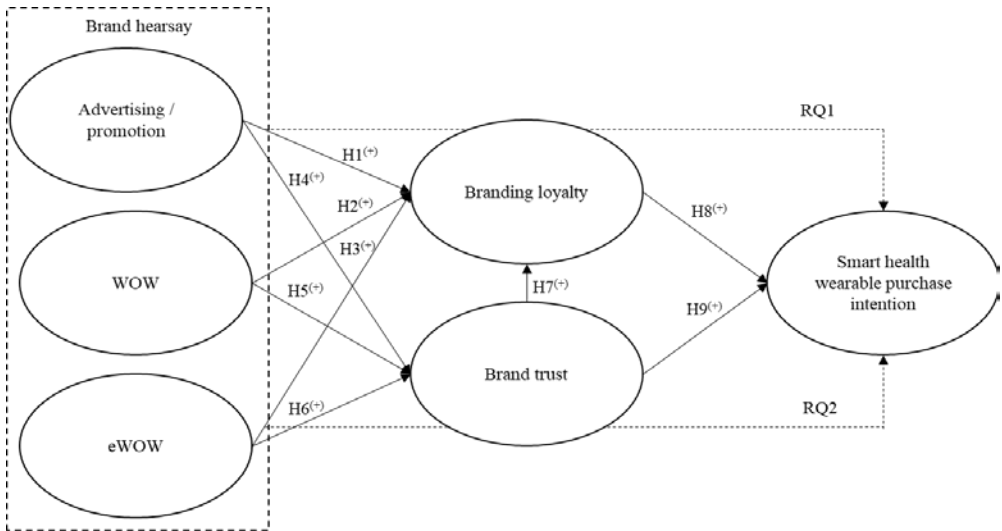


Figure 1. Conceptual framework

Methodology

Following a descriptive research design and cross-sectional approach, this quantitative study gathered data from a non-probability purposive sample of 500 adult consumers aged 18 to 56 residing in all nine provinces in South Africa. This age inclusion was based on the definition of generational cohorts by Markert (2004). In 2022, 18-36-year-olds represented the Generation Y cohort, and 37-56-year-olds represented the Generation X cohort. A reputable research company in South Africa that adheres to ethical standards and POPI Act regulations was used to distribute the survey amongst its panel members, implicitly instructing it to target South African-residing consumers and achieve equal gender, cohort, and stated age distribution.

Data were analyzed using SPSS Version 28, comprising a Mahalanobis Distance Test to eliminate outliers, frequency analysis, principal components analysis, Cronbach alpha calculation to establish the factors' internal consistency and composite reliability, descriptive statistics, and a one-sample t-test, Pearson's product-moment correlation analysis and collinearity diagnostics for nomological validity analysis. Furthermore, AMOS Version 28.0 was then used to perform confirmatory factor analysis using the maximum likelihood method, internal consistency and composite reliability analysis, convergent and discriminant validity analyses, concluding with path analysis (regression analysis) to test the hypotheses. The level of statistical significance was set at $p < 0.01$, and since these items were measured on a six-point scale, the test value to execute the one-sample t-test was set at 3.5.

Research instrument and ethical considerations

The electronic, computer-administered research instrument comprised a cover page with the study's scope, an informed consent statement to ensure voluntary participation, a demographic section, and a section for smart health wearable background information. The scaled section probed participants to respond to specific scaled items on a six-point Likert scale based on their preferred smart health wearable

brand. Scales were retrieved from previously validated research: Purchase intentions (three items) from Besharat (2010); Brand loyalty (five items) from Yoo et al. (2000) and Cheung et al. (2020); Brand trust (five items) from Chaudhuri and Holbrook (2001); and Brand hearsay three sub-scales (13 items total) from Kim et al. (2019).

This study adhered to stringent ethical considerations, including obtaining ethical clearance from the relevant University's Research Ethics Committee, informing the participants of the minimal risk associated with completing the survey and emphasizing voluntary completion, and lastly, ensuring the project data are stored in an encrypted Microsoft OneDrive folder with limited access.

Results and discussion

Following the data cleaning process and performing a Mahalanobis Distance Test to eliminate multivariate outliers (Tabachnick & Fidell, 2013), 487 out of the 500 intended cases were viable for data analysis. This translates to a 97.4 percent success rate. The study sample consisted of 48.7% males and 51.1% females (0.2% other), with more individuals representing the Generation Y cohort (60%) versus 40% Gen Xers, and scattered provincial representation, where 49.9% reside in Gauteng, 15.6% in KZN, 15.2 in the WC and the remaining 19.3 in the other six provinces. A finding that possibly impacted the study's multivariate findings is that only 51.5% of this sample owned a smart health wearable device. However, this also strengthens the need for strategic marketing intervention.

The purchase intentions responses were two-fold for this reason. It measured initial first-time purchase intentions and considered ownership to measure continued purchase intentions. Among the confirmed device owners, selecting all relevant options, the most preferred devices included fitness watches (240), fitness bands (70), head/arm/check HR straps (26), smart clothing (60), smart jewelry (61), and clip-on pedometers or step counters (25). Given the misinterpretation of smart wearables as Bluetooth audio devices instead of those capable of measuring heart rate, speed, and distance when running, this device type was removed.

Whether due to economic conditions, lack of awareness or interest, and possibly skepticism, it seems that South African consumers are not yet attaching high importance to investing in their health monitoring using smart health wearables since two-thirds (66.6%) of this sample is willing to spend only up to R3000 on a device, with 29% only committing to max R999. The remainder of the sample was willing to commit more than R3000. To contextualize the subsequent findings, all scaled questions were based on the participants' stated favorite smart health wearable brand. This study's sample preferred the following brand, in preferential order: Samsung (33.3%), Huawei (22.4%), Apple (17.9%), Fitbit (10.1%), Garmin (7.6%), Xiaomi (3.5%), Polar (1.6%), TomTom (1%), Jabra (0.4%), Suunto (0.2%), Wahoo (0.2%), with other brands comprising the remaining 18%.

Instrument reliability and validity: factor analysis results

Henceforth, the research instrument was evaluated statistically. The findings for the pre-hypotheses testing analyses are reported in aggregate, confirming the instrument's reliability, validity, and statistical significance, as per Hair et al. (2019).

Principal components analysis using the varimax rotation was executed. One item from the loyalty factor was removed due to incorrect loading, thus retaining 25 items and six factors that explained 79.21% of the variance (78.83% before item removal). Factor loadings ranged between 0.504-0.855, and communality value between 0.716-0.868. The final Kaiser-Meyer-Olkin (KMO) test and Bartlett's sphericity test returned satisfactory values [KMO = 0.949, chi-square Bartlett test = 9727.210 (df = 276), $p = 0.000$]. The internal consistency reliability of the 24-item instrument was established by its computed $\alpha=0.952$, with individual values as follows: PI $\alpha=0.910$; BL $\alpha=0.854$; BT $\alpha=0.918$; BHAP $\alpha=0.936$; BHW $\alpha=0.908$; BHeW $\alpha=0.893$. The descriptive statistics and one-sample t-test revealed that all six factors are statistically significant at $p<0.01$ with positive mean scores [purchase intentions $\bar{x}=5.04$; $\sigma=0.960$; $t=35.311$; $p<0.001$], [brand trust $\bar{x}=5.11$; $\sigma=0.837$; $t=42.392$; $p<0.001$], [brand loyalty $\bar{x}=4.58$; $\sigma=0.1.034$; $t=23.067$; $p<0.001$], [brand hearsay advertising and promotion $\bar{x}=4.87$; $\sigma=0.922$; $t=32.733$; $p<0.001$], [brand hearsay WOM $\bar{x}=3.96$; $\sigma=0.1.416$; $t=7.227$; $p<0.001$], [brand hearsay eWOM $\bar{x}=4.39$; $\sigma=0.1.141$; $t=17.291$; $p<0.001$].

The absence of multicollinearity issues was confirmed given the statistically significant ($p<0.01$) relationships between all latent factors, the calculated tolerance values ranging between 0.321 and 0.535, and a computed average VIF of 2.387. The relationships between the six latent factors range between $r=0.244$ -0.732, with the strongest relationship recorded between brand trust and purchase intentions $r=0.732$ and the weakest between WOM and purchase intentions $r=0.244$. Confirmatory factor analysis was performed via a 24-item, six-factor, maximum-likelihood-based measurement model. The model returned a chi-square value of 646.935 with $p=0.000$, 324 distinct sample moments, and 87 distinct parameters to be estimated, leaving 237 degrees of freedom (df) based on an overestimated model.

Model fit was confirmed given the accepted above-threshold values: NFI = 0.935, IFI = 0.958, TLI = 0.950, CFI = 0.957, SRMR = 0.0425, RMSEA = 0.060. The reliability and validity of the measurement model were concluded, given that the alpha and CR values ranged between $r=0.850$ -0.936, and all factor loadings and AVE values were above the required 0.50 threshold. Furthermore, excluding one occurrence, the AVE squared exceeded the correlation estimates between the relevant factors. Since the square root of the AVE for brand loyalty (0.768) was less than the absolute value of its correlation with brand trust (0.801), the HTMT ratios were computed as an alternative measure to confirm the discriminant validity. The latter was concluded since all HTMT ratios fell significantly below 1, ranging between 0.245 and 0.739.

Research question and hypotheses reporting

A structural model was specified to test the hypothesized paths, R2 values, and the direct, indirect, and total effects to conclude the mediating role of brand loyalty and trust. Though the structural model returned a significant chi-square value [(651.636 (df = 240, $p = 0.000$)]], the model returned acceptable fit indices, including an IFI of 0.957, a TLI of 0.951, CFI = 0.957, an SRMR of 0.0457 and an RMSEA of 0.059. Brand hearsay (advertising, promotion, WOM, and eWOM) contributes 64.8% of smart health wearable brand trust variance. In contrast, these four variables, in turn, contribute to 65.8% of the variance of smart health wearable brand loyalty. These five factors contribute to 67.2% of South African consumers' smart health wearable purchase intentions. Table 1 displays the estimates per hypothesized path.

Table 1. Structural Model Path Estimates (Source: Authors' results)

H	Paths	Unst. β	St. β	SE	p-values	Results
1	Adv/prom \rightarrow Loyalty	0.20	0.19	0.074	0.008*	Accepted
2	WOM \rightarrow Loyalty	0.11	0.15	0.038	0.003*	Accepted
3	eWOM \rightarrow Loyalty	-0.01	-0.01	0.050	0.877	Rejected
4	Adv/prom \rightarrow Trust	0.73	0.82	0.045	0.000*	Accepted
5	WOM \rightarrow Trust	-0.04	-0.07	0.031	0.160	Rejected
6	eWOM \rightarrow Trust	0.022	0.03	0.042	0.593	Rejected
7	Trust \rightarrow Loyalty	0.71	0.61	0.079	0.000*	Accepted
8	Trust \rightarrow PI	0.63	0.58	0.072	0.000*	Accepted
9	Loyalty \rightarrow PI	0.26	0.28	0.061	0.000*	Accepted
Unst.: unstandardized; St.: standardized; β : beta coefficient; SE: standard error; * $p < 0.01$						

Contrary to expectations, WOM/eWOM had no statistically significant influence on consumers' trust towards their preferred smart health wearable brand, nor had eWOM on their brand loyalty. WOM had, however, contributed significantly to brand loyalty. All other paths were statistically significant, and whereas H3, H5, and H6 were rejected, H1, H2, H4, H7, H8 and H9 were accepted. However, to establish the mediating role of trust and loyalty and which brand hearsay type contributes most to consumers' purchase intentions, a bootstrap procedure with 2000 samples was performed, and the findings are presented in Table 2.

Table 2. Direct, indirect, and total effects (Source: Authors' results)

Dependent variables	Independent variables	Direct effects	Indirect effects	Total effects
Purchase intentions	Brand loyalty	0.276***	-	0.276***
	Brand trust	0.581***	0.168***	0.750***
	Advertising/promotion	-	0.633***	0.663***
	WOM	-	-0.010	-0.010
	eWOM	-	0.021	0.021
Brand loyalty	Brand trust	0.609***	-	0.609***
	Advertising/promotion	0.188*	0.497***	0.684***
	WOM	0.154**	-0.043	0.111
	eWOM	-0.009		0.010
Brand trust	Advertising/promotion	0.815***	-	0.815***
	WOM	-0.071	-	-0.071
	eWOM	0.031	-	0.031
Note: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$				

Conclusions

Understanding consumer perceptions is essential to drive the health wearables market. The South African consumer market has a great outlook for this market in the coming years despite slower adoption (Statista, 2023, 2024a).

This research aimed to determine the influence of brand hearsay on smart health wearable purchase intentions through the mediating roles of brand trust and loyalty. Results proved that for brands to succeed in this competitive market, they need to

ensure they build relationships and trust with South African consumers, as this will increase the likelihood of them purchasing their devices. While smart health wearable brands should focus on building a loyal customer base to recruit new users via WOM, they are far more likely to increase their market share and revenue by channeling efforts to advertising and promotions to attract new smart wearable users. Smart health wearable brands' advertising and promotions strategies should be continuously executed strategically to build brand trust and subsequent purchase intentions. As for the inconclusive findings linked to WOM and eWOM and their adverse and non-significant effect on trust, loyalty, and subsequent purchase intentions, it is necessary to establish brand awareness and consider whether device ownership moderates any of the findings.

These findings have several implications. First, this study advanced the literature on the branding of smart health wearables with its theoretical framework and inquiry approach. It supplied a foundational model that investigated the roles of brand hearsay, its association with loyalty and trust, and the subsequent impact on SHW purchase intentions. This framework can be expanded to include other brand-specific variables, such as brand reputation, brand personality, brand awareness, and brand association, combined with other exogenous variables, such as epidemiological trends, technological advancements, and economic conditions, in the same context of this study. The addition of these variables will provide a complete picture of how the importance of fostering brand loyalty and ensuring brand trust impacts SHW purchase behavior. Having access to the extended findings of such an expanded model, in South Africa and internationally, will provide the optimal competitive advantage to SHW device manufacturers as they will be able to target the appropriate consumer, use strategic marketing tactics to capture their intended markets, retain a larger existing customer base and by extension brand advocates, become trustworthy industry leaders while expanding and enhancing their market position. This, combined with this study's findings, lends itself to several practical and managerial implications.

Despite being in the digital era, where consumers have convenient access to SHW information and product comparisons, eWOM had no significant influence on consumers' SHW brand trust and loyalty. Other studies (Ekelund & Kollberg, 2021; Yang & Mundel, 2022) suggest that this finding is supported by the increase in negative eWOM. It could also be because consumers are inundated with online and social media ads, constant emails, and e-commerce pop-up notifications, leading to a feeling of overwhelm. This implies that advertising, promotion, and WOM significantly impact consumers' loyalty and trust. Smart health wearable brands must continue spending their marketing budget on these approaches. However, for SHW brands to ensure positive eWOM, they need to address the erosion of trust due to negative online reviews by addressing them immediately. Avoiding this damaged reputation will ensure a positive association with the brand, build trust and loyalty, and ultimately lead to increased SHW purchases.

Even with the care taken in formulating the model and efforts to ensure methodological rigor, the research has limitations that must be highlighted. The sample was carefully collected from many Generation Y and X respondents in South Africa. However, it is not probabilistic, being a convenience sample, which limits the generalization of the results. Another point of limitation is in the model, where the

variables used do not include all influencers of smart health wearable purchase intention.

We can consider some suggestions for future research. The model and questionnaire can be applied in other contexts, such as countries or regions, to compare the results. Other constructs can be added to the model to understand better behavioral antecedents and multigroup analyses (e.g., male and female). Qualitative longitudinal research can also explore how variables behave over time.

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