Acceptance of Wearable Technology: A Meta-Analysis

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Abstract

Knowing what factors drive wearable technology adoption can help companies succeed in the competitive market of wearables. In this study, we conduct a meta-analysis on the relationships of technology acceptance of wearable technology based on the extant corpus (142 effect sizes from 44 samples collected in 11 countries). The results confirm the basic expectation that the core constructs of technology acceptance models as well as reveal that perceived enjoyment and usefulness are the most important to the adoption of wearables. However, more interestingly, a granular analysis of moderating effects shows that cultural factors including uncertainty avoidance, future orientation and humane orientation can significantly moderate the relationships between different determinants and wearable adoption. In addition, compared with other types of smart wearables, the users of smartwatches would place more weight on perceived self-expressiveness. These findings offer insights for future wearables-related research and also have practical implications for designing and developing successful wearable products.

1. Introduction

Wearable technology refers to a category of smart electronic devices that can be worn by the users and often includes detecting, tracking and analyzing information regarding biological and physiological data. It can be seen there has been a growing trend in the market of consumer-grade wearables during the past ten years, especially in the entertainment (e.g. gaming wearables, see [4]) and health sector (see [49]). Based on the forecast of Gartner, the end-user spending on wearables will total $81.5 billion in 2021, an 18.1% increase from $69 billion in 2020. The increasingly fierce market competition highlights the necessity of understanding the factors that influence consumers' attitude and willingness to purchase and use wearable products. Additionally, the importance of these factors to users may differ across various countries and products.

In literature, the current studies have examined factors such as perceived usefulness, perceived ease of use, performance expectancy, effort expectancy, and hedonic motivation, see e.g., [33][40][50][56][57][60]; subcultural appeal, see e.g., [24][25][26]); self-expressiveness, see e.g., [11][44]; affective quality, see e.g., [25][26]; and privacy risk, see e.g., [34][44], however, it can be seen that these scattered empirical evidence hardly provide a holistic and comprehensive view on the in-depth mechanism of what kinds of, how and under which conditions these factors differently lead to wearable adoption and acceptance. In addition, in terms of the research methodology, the generalized assessment of the relative importance of diverse key factors to wearable adoption is still unknown, given the majority of prior studies have investigated the effectiveness of these factors with one or two small samples for a particular type of wearable technology in a single country. Further, there seems no consensus on the effects of different factors on the adoption of wearables. To be more specific, for example, [15] found that the effect of perceived ease of use on adoption intention was not significant, while most studies have proved that perceived ease of use is significantly associated with the adoption intention of wearables. More importantly, there is a lack of discussion on the boundary conditions influencing wearable adoption, such as factors related to cultural factors and wearable product types. Such investigation is essential considering that the wearable technology market spreads across the world and contains various types of wearable devices, such as smartwatches, smart glasses, and wearable healthcare devices.

Therefore, in this study, we aim at addressing the mentioned research gaps by conducting a meta-analytic review to provide a more concise view of determinants of adoption of wearable technology from the perspective of technology acceptance model (TAM) [13]. Specifically, we first integrate numerous but sporadic findings to develop a comprehensive framework for explaining the relationships between different key factors and wearable adoption. Second, the importance of factors in wearable adoption are further assessed through a meta-analysis by estimating the mean values and range of these relationships. Third, the meta-analysis accumulates findings from diverse research objects and various countries and areas; thus, we further investigate the moderating effects of cultural-related factors and wearable technology type on the above relationships.

2. Research framework and hypotheses

In this section, we first hypothesize the relationships between different influencing factors and the adoption of wearables, and then theorize the moderators mainly including cultural-related factors and wearable technology type. Figure 1 below briefly presents the research framework.
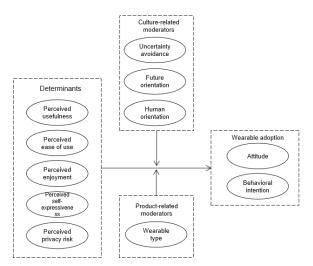

Figure 1. The meta-analytic framework

2.1 Determinants in wearable adoption

Perceived usefulness. The perceived usefulness of wearable technology refers to the degree to which the wearable technology is useful to help consumers achieve their goals, such as health improvement. TAM predicts individuals who believe the perceived usefulness of technology tends to display positive responses. UTAUT2 (the unified theory of acceptance

and use of technology) also argues that performance expectancy (an alias name for usefulness, defined as the degree to which the technology is effective to users in performing specific activities) can determine individuals' behavioral intentions. In addition, the recent studies also empirically demonstrate that usefulness can enhance individuals' willingness to purchase and use wearable technology (e.g., [12][33]). Thus,

H1: Perceived usefulness has a positive impact on the adoption of wearables.

Perceived ease of use. The perceived ease of use of wearable technology, in this study, refers to the degree to which using the wearable technology would be free of effort. Perceived ease of use emphasizes the ergonomics of a product [23]. This construct also originates from TAM and has an alternative name, called effort expectancy, in UTAUT2. It can be assumed that when customers perceive high ease of using a certain wearable technology, they would be more likely to conduct actual use. The literature in wearable technology adoption also suggests a direct positive effect of perceived ease of use on usage intention and behavior (e.g., [26][33][65]). Thus,

H2: Perceived ease of use has a positive impact on the adoption of wearables.

Perceived enjoyment. Following the literature in technology adoption [61], perceived enjoyment is defined as the delight or enjoyment derived from adopting and utilizing wearable technology. Perceived enjoyment reflects the hedonism of a product [39]. When technology-specific enjoyment increases, usage intention would also become higher. In the context of wearable technology, studies reveal that users pay attention to the perceived enjoyment of smart wearable products [43][66]. Thus,

H3: Perceived enjoyment has a positive impact on the adoption of wearables.

Perceived self-expressiveness. Perceived self-expressiveness describes the degree to which a technology can reflect one's personal characteristics [36]. The wearable that is worn by users can also be seen and observed by others; thus is able to influence others' impression of the user. In this case, users consider wearable technology not only as an IT product but also as a fashion product [11]. Recent studies show evidence that users indeed attach importance to perceived self-expressiveness and intend to use wearable technology to express their own uniqueness (e.g., [11][24][26]). Thus,

H4: Perceived self-expressiveness has a positive impact on the adoption of wearables.

Perceived privacy risk. In line with prior studies [17], perceived privacy risk represents the risk of wearable technology misusing consumers' personal

information. Wearable technology can collect huge amounts of personal information and data of the users. Moreover, these smart wearable devices can easily track and monitor users' real-time positions via an embedded GPS feature. These sensitive information bring anxiety and concerns to users such that perceived privacy risk would inhibit their adoption willingness of wearable technology [34][51]. Thus,

H5: Perceived privacy risk has a negative impact on the adoption of wearables.

2.2 Moderators for wearable adoption

Uncertainty avoidance. Uncertainty avoidance pertains to the extent to which individuals alleviate the unpredictability of future events [20]. Individuals in high-uncertainty avoidance cultures are more risk-averse [54]. Therefore, compared with low-uncertainty avoidance cultures, the factor that leads to perceived risk should have a higher negative impact on usage intention in high-uncertainty avoidance cultures. Given perceived privacy risk naturally deteriorates perceived risk, the negative effect of perceived privacy risk on usage intention should be higher in high-uncertainty avoidance cultures. In addition, the most important factor consumers usually consider first when making the purchase decision is functionality [8]. [39] found that only when functionality is explicitly introduced to consumers, would they feel safer. This finding reveals that functionality can reduce perceived risk. Because perceived usefulness is highly related to the functionality of wearable technology, perceived usefulness is expected to be associated with risk and become more important in high-uncertainty avoidance cultures. This expectation is consistent with the observation in [68] that the interaction between uncertainty avoidance and perceived usefulness would have a significantly positive effect on consumer acceptance of e-commerce. Thus,

H6: The positive influence of perceived usefulness on the adoption of wearables is relatively stronger in a high-uncertainty avoidance culture than in a low-uncertainty avoidance culture.

H7: The negative influence of perceived privacy risk on the adoption of wearables is relatively stronger in a high-uncertainty avoidance culture than in a low-uncertainty avoidance culture.

Future orientation. Future orientation refers to the extent to which individuals engage in future-oriented behaviors, such as planning, investing in the future, and delaying gratification [20]. In a high-future orientation culture, individuals care about the consequences of their actions and are self-responsible and super-achievers [30]. The regulatory focus theory [18] indicates that self-responsible consumers usually have prevention goals pertaining to those that ought to be met. In [9], consumers with prevention goals show greater interest in the utilitarian attributes of a product. The utilitarian benefits of wearable technology can be featured as perceived usefulness. Therefore, the future orientation would enhance the impact of perceived usefulness on wearable technology adoption. In contrast, in a low-future orientation culture, consumers possess a hedonistic orientation towards time and life and seek hedonic gratification and enjoyment [70]. Then, the future orientation would restrain the effectiveness of perceived enjoyment on wearable technology adoption. Thus,

H8: The positive influence of perceived usefulness on the adoption of wearables is relatively stronger in a high-future orientation culture than in a low-future orientation culture.

H9: The positive influence of perceived enjoyment on the adoption of wearables is relatively weaker in a high-future orientation culture than in a low-future orientation culture.

Humane orientation. Humane orientation refers to the extent to which a society encourages and rewards individuals for being fair, altruistic, generous, caring, and kind to others [20]. In the high-humane orientation culture, individuals show great concerns about the well-being of people [14]. The ergonomics of the technology determines the well-being of using technology. According to product design theory [23], perceived ease of use reflects the ergonomics of a technology. It can be assumed that humane orientation would strengthen the effect of perceived ease of use on wearable technology adoption. Moreover, studies have shown a high-humane orientation working environment can help leaders to foster a sense of trust in the followers [64], implying that humane orientation enhances trust. In a trustworthy environment, individuals might pay less attention to privacy risk, since they believe firms of wearables would not misuse their personal information. Thus, humane orientation could further diminish the negative effect of perceived privacy risk on the adoption of wearables. Thus,

H10: The positive influence of perceived ease of use on the adoption of wearables is relatively stronger in a high-humane orientation culture than in a low-humane orientation culture.

H11: The negative influence of perceived privacy risk on the adoption of wearables is relatively weaker in a high-humane orientation culture than in a low-humane orientation culture.

Smartwatches vs. other types. Multiple types of smart wearable products have been investigated in prior studies, such as smartwatches [11], smart glasses [17], and wearable healthcare technology [34]. Consumers usually consider watches as fashion

products with symbolic benefits that help them to express their self-image [53] and obtain social benefits, while having no or a weaker expectation of the majority of other types of wearable devices. Accordingly, the perceived self-expressiveness that reflects symbolic benefits might be more important for smartwatch users. Thus,

H12: Among the wearable products, the positive influence of perceived self-expressiveness is stronger on the adoption of smartwatches than the adoption of other types of wearables.

3. Database development

3.1 Data collection

We conducted a meta-analytic review on the relationships between five determinants and wearable adoption as well as the moderators among them. Various databases were employed to identify relevant studies in the literature. First, we searched for published articles via checking electronic databases, including EBSCO, ProQuest ABI/INFORM, ScienceDirect, Web of Science, Scopus, Emerald, and JSTOR. Then, we searched for relevant theses in ProQuest Dissertations and Theses. Finally, we identified relevant working papers in SSRN, Google Scholar, ResearchGate, and ACM Digital Library. We used "wearable" together with "acceptance or adoption or intention use or determinant" as the search terms. After the search process, we only kept those identified studies that provided correlations of interest since correlation is the most common effect size in this research stream. Eventually, we identified a total of 40 articles with 44 independent samples and 142 effect sizes, including two working papers. The number of articles included is consistent with several published meta-analyses in marketing, such as [35] (47 articles), [55] (42 articles), and [59] (37 articles). All articles are listed in Table 1.

Table 1. Articles involved in the meta-analysis

Study	Country/area	Sample	Wearable type	Study	Country/area	Sample	Wearable type
[5]	South Korea	342	Wearable devices	[34]	United States	260	Wearable healthcare devices
[7]	Hong Kong	171	Wearable healthcare devices	[37]	United States	574	Smartwatch
[10]	United States	120	Smart vest & smartwatch	[38]	Netherlands	182	Smart phone, wristband, & watch
[11]	South Korea	562	Smartwatch	[40]	India	273	Wearable healthcare devices
[12]	Malaysia	226	Smartwatch	[41]	South Korea	877	Wearable healthcare devices
[15]	China	232	Fitness Wearable	[43]	United States	228	Smart glasses
[15]	China	230	Medical wearable	[44]	German	201	Smart glasses
[16]	United States	256	Wearable fitness devices	[45]	German	201	Smart glasses
[17]	German	611	Smart glasses	[49]	United States	277	Wearable healthcare devices
[21]	Taiwan	170	Smartwatch (users who used)	[50]	Taiwan	376	Smart glasses
[21]	Taiwan	170	Smartwatch (users who never used)	[51]	India	815	Wearable healthcare devices
[22]	Taiwan	260	Smartwatch	[56]	China	392	Wearable fitness devices
[24]	South Korea	1138	Wearable devices	[57]	China	325	Wearable healthcare devices
[26]	South Korea	363	Smartwatch	[58]	United Arab Emirates	108	Wearable devices
[25]	South Korea	200	Smartwatch	[60]	Turkey	707	Smart t-shirt & smart bra
[27]	South Korea	247	Wearable fitness devices	[62]	China	158	Wearable healthcare devices
[28]	India	386	Smartwatch	[63]	German	353	Wearable healthcare devices
[29]	German	2086	Wearable locating systems	[65]	Taiwan	212	Smartwatch
[31]	China	333	Wearable healthcare devices	[66]	South Korea	375	Wearable devices
[32]	China	146	Wearable healthcare devices	[67]	Netherlands	76	Smart glasses
[33]	United States	206	Wearable fitness devices	[69]	China	436	Wearable healthcare devices

3.2 Coding process

We followed the definitions being proposed in section 2 to code variables. If a sample has two effect sizes representing the same relationship, we took the average. Moreover, there are missing values in reliability scores of drivers (7/142) and reliability scores of consumers' responses to wearable technology (10/142). These numbers of missing values are far fewer than those in prior meta-analyses, such as 90 missing values out of 123 effects in [6]. As with prior meta-analyses (e.g., [1][6]), we replaced the missing values with mean values. Finally, cultural dimension

data comes from the Global Leadership and Organization Behavior Effectiveness (GLOBE, [20]). We took the average cultural values among the countries in the Middle East for the United Arab Emirates, since GLOBE does not provide data for this country.

4. Data analysis

4.1 Correlation analysis

In line with common practice in meta-analytic studies [47], we first adjusted correlations for measurement error. Next, we transformed the reliability-corrected correlations into Fisher's z-coefficients and weighed them using their inverse variance to give more weight to more accurate measures. We further transformed the z-scores back to obtain mean correlations between the key factors and users' intention for the adoption of wearable technology. Furthermore, we calculated the standard error and confidence interval of the mean effect, and estimated the fail-safe sample size (N_{fs}) using Rosenthal's [46] method to assess the possibility of publication bias or the file drawer problem. Finally, we tested the hypothesis of homogeneity of the population correlations using the Q-statistic and the I^2-statistic [2].

Table 2 presents the results. In support of H_1-H_5, the generalized correlations demonstrated that perceived usefulness, perceived ease of use, perceived enjoyment, and perceived self-expressiveness positively influenced consumers' responses to wearable technology adoption, while perceived privacy risk negatively affected consumers' responses to wearable technology adoption. Specifically, for attitude towards wearable technology, perceived enjoyment had the highest effect (r = .754), followed by perceived usefulness (r = .694), perceived self-expressiveness (r = .563), perceived ease of use (r = .522), and perceived privacy risk (r = -.273). However, the importance ranking changed for behavioral intention to use wearable technology. In particular, perceived usefulness had the highest effect (r = .737), followed by perceived enjoyment (r = .647), perceived ease of use (r = .502), perceived self-expressiveness (r = .475), and perceived privacy risk (r = -.292). Moreover, we can observe that these factors impact attitude almost as strongly as behavioral intention.

Furthermore, all the relationships that are heterogeneous were indicated by a high value of I^2 (greater than 75%) and Q (< .001) [19], with one exception that the relationship between perceived privacy risk and attitude towards wearable technology adoption had the I^2 of 72.36%, close to 75%. These tests imply that it is necessary to conduct moderating analysis. Also, high fail-safe sample sizes (N_{fs}) prove there exists no publication bias in our database.

Table 2. Correlations between different factors and wearable technology adoption

Relationships	Number of samples	Number of effects	Number of observations	Q-value	I2	Mean correlations	95% CI	Fail-safe N
Usefulness - Attitude	12	12	5533	503.103***	97.60%	.694	(.579, .782)	11214
Ease of use - Attitude	11	11	5507	180.322***	95.71%	.522	(.405, .621)	4356
Enjoyment - Attitude	7	7	3346	135.652***	96.88%	.754	(.642, .834)	6134
Self-expressiveness - Attitude	6	6	2646	44.614***	89.20%	.563	(.460, .651)	1790
Privacy risk - Attitude	2	2	1426	3.618***	72.36%	-.273	(-.372, -.168)	64
Usefulness - Behavioral intention	36	39	15119	1311.223***	96.59%	.737	(.563, .684)	81023
Ease of use - Behavioral intention	24	25	9623	571.571***	96.03%	.502	(.410, .584)	15657
Enjoyment - Behavioral intention	18	19	7094	449.598***	96.42%	.647	(.559, .720)	22621
Self-expressiveness - Behavioral intention	7	7	2874	258.903***	95.80%	.475	(.296, .622)	1286
Privacy risk - Behavioral intention	11	11	5413	327.215***	94.37%	-.292	(-.413, -.161)	1688

***p <.001

4.2 Moderation analysis

To conduct moderation analysis, we first combined effect sizes for attitude with those for behavioral intention to enlarge the number of effect sizes. Considering that the number of effect sizes is still not huge, we accepted a simple random-effects meta-analytic model that only contains one moderator and a dummy control variable referring to whether the effect size connects attitude or behavioral intention. Following prior meta-analyses [42], we applied this model to test each moderator in turn with the maximum likelihood estimation method.

Table 3 presents the results of the meta-regression models. The findings in the various regression models were used to test H6-H12, as indicated in Table 3. As expected, a positive coefficient was found to be related

to uncertainty avoidance when testing the influence on the effect size representing the relationship perceived usefulness-adoption. This finding shows that uncertainty avoidance did increase the positive influence of perceived usefulness on adoption (H6). We found a negative coefficient of uncertainty avoidance on the relationship perceived privacy risk-adoption. In other words, the negative impact of perceived privacy risk on adoption becomes stronger with the increase in uncertainty avoidance (H7). In support of H8, it can be seen that future orientation indeed positively influenced the effect of perceived

usefulness on adoption. However, contrasting with H9, we did not find any evidence that future orientation would moderate the relationship perceived enjoyment-adoption. The hypotheses (H10-H11) related to humane orientation were supported, showing humane orientation could strengthen the positive effect of perceived ease of use on adoption, while weakening the negative effect of perceived privacy risk on adoption. In addition, the relationship between perceived self-expressiveness and adoption was stronger for smartwatches than other types of wearable technologies (H12 was supported).

Table 3. Moderating effects: meta-regression estimates

	Independent variables											
	Model (1)			Model (2)			Model (3)			Model (4)		
	Intercept	Uncertainty avoidance	Attitude	Intercept	Future orientation	Attitude	Intercept	Humane orientation	Attitude	Intercept	Smart watches	Attitude
Usefulness-adoption	.348 (.312)	.123 (.072)+	-.151 (.104)	-.776 (.742)	.399 (.180)*	-.082 (.102)	.934 (.458)*	-.020 (.116)	-.116 (.107)	.812 (.099)***	.104 (.096)	-.104 (.105)
Ease of use-adoption	.090 (.320)	.123 (.078)	-.058 (.098)	-.245 (.904)	.204 (.222)	-.016 (.099)	-.559 (.443)	.285 (.109)**	-.059 (.092)	.507 (.090)***	.161 (.095)+	-.003 (.097)
Enjoyment-adoption	1.163 (.413)**	-.045 (.099)	-.199 (.132)	-1.375 (1.669)	.591 (.418)	-.217 (.125)+	.469 (.690)	.134 (.179)	-.240 (.134)+	.885 (.135)***	.136 (.116)	-.172 (.131)
Self-expressiveness-adoption	.915 (.394)*	-.070 (.096)	-.117 (.123)	.377 (1.152)	.063 (.281)	-.118 (.125)	-.265 (1.054)	.241 (.281)	-.133 (.123)	.525 (.097)***	.218 (.109)*	-.104 (.109)
Privacy risk-adoption	.567 (.459)	-.182 (.095)+	-.024 (.135)	.046 (1.135)	-.079 (.271)	-.029 (.157)	-1.293 (.362)***	.258 (.088)**	-.025 (.119)	-.280 (.141)*	____	-.021 (.155)
Hypotheses	Uncertainty avoidance for perceived usefulness (H_6: +), perceived privacy risk (H_7: -)			Future orientation for perceived usefulness (H_8: +); perceived enjoyment (H_9: -)			Humane orientation for perceived ease of use (H_{10}: +); perceived privacy risk (H_{11}: +)			Smartwatches for perceived self-expressiveness (H_{12}: +)		
Supported?	Yes/Yes			Yes/No			Yes/Yes			Yes		

Note: The perceived privacy risk-adoption model does not have effect sizes from smartwatches. Standard errors are in the parentheses.
+p <.1; *p <.05; **p <.01; ***p <.001

5. Discussions

5.1 Research contribution

The meta-analysis review study makes several contribution to the literature and also has various implications for theory and future research. First, the current state of research only provides fragmented and relatively divergent findings regarding the driving factors of wearable technology adoption. One of the main contribution is that this study integrates the existing findings and proposes a comprehensive framework for the relationships between five main determinants and wearable technology adoption. More

importantly, all the proposed factors were proven as important predictors for wearable adoption, including perceived usefulness, perceived ease of use, perceived enjoyment, perceived self-expressiveness, and perceived privacy risk. These variables can be regarded as the essential determinants of the adoption of wearable products and devices and should be taken into account in further attempts to construct and test explanatory models.

Second, the generalized correlations also provide an in-depth explanation and understanding of the importance of different determinants. We found that both perceived usefulness and perceived enjoyment are the most important drivers of wearable technology adoption. This finding contributes to the debate about

whether wearable technology is an IT product or a fashion product [11]. The comparison between technology benefits (perceived usefulness, perceived ease of use, perceived enjoyment, and perceived self-expressiveness) and privacy risk revealed that technology benefits weigh heavier to consumers than privacy risk. This observation provides an important explanation to the debate on the privacy paradox that while the privacy of personal data is an important issue for information technology users, most users seldom make an effort to protect their own data [52].

Third, we found the moderating roles of cross-cultural factors and cross-wearable types in the relationships between different factors and adoption, which makes a considerable contribution to the wearable-related research field. For example, the predicted difference in effect size capturing the impact of perceived usefulness between the Netherlands (as the most future-oriented country in the analysis), and the United Arab Emirates, as the least future-oriented one, is up to .403. The cross-cultural findings contribute to the debate about the robustness of research conclusions drawn in different cultures [3]. Therefore, it is necessary to add cultural contingency factors into the model of wearable technology adoption. In addition, the findings also reveal that wearable technology types can be considered as significant moderating variables which enrich the research on the adoption of wearables.

5.2 Practical implications

This study provides several implications to business practitioners and wearables designers. First, the market of smart wearable devices is still at the initial stage. Practitioners have relatively less knowledge about consumers' attitude towards smart wearable devices than other mature information technologies. The proposed framework and the generalization analysis offer firms an overview of what kinds of, how and under which conditions, different factors are important to wearable technology adoption. Based on the results, business practitioners should make efforts to improve perceived usefulness, perceived ease of use, perceived enjoyment, and perceived self-expressiveness, and decrease perceived privacy risk.

Second, according to the analysis of the relative importance of factors to wearable adoption, we can find that both perceived usefulness and perceived enjoyment are the most important drivers of the adoption of wearables. These findings suggest that a smart wearable product is not only an IT product, but also a hedonic fashion product. If designers only focus on technical innovation, users might not have a high

willingness to adopt a certain wearable product. Furthermore, given the magnitude of perceived privacy risk's negative effect is far smaller than that of technology benefits, wearable developers may require more of consumers' data to advance product performance and offer more personalized service.

Third, moderation analysis suggests that wearable firms need to adopt different business strategies to develop or promote wearable products in different cultures for various types of wearable technology. In particular, for a high-uncertainty avoidance culture, firms should improve and highlight perceived usefulness, and reduce consumers' privacy concerns, such as explicitly showing how to collect and use personal data. For the future-oriented culture, firms also should put perceived usefulness into consideration. Regarding the high-humane culture, firms need to invest in perceived ease of use to enhance consumers' well-being. Meanwhile, consumers are more willing to trust firms with their personal data. Also, firms should realize that consumers expect higher symbolic benefits, such as self-expressiveness, for smartwatches than other types of wearable products.

6. Conclusions

This study aims at determining the key factors which influence wearable technology adoption through a meta-analytic review of prior research. We proposed an integrated and comprehensive framework of the relationships between different factors and wearable technology adoption. In addition, we explain the cross-cultural and cross-wearable technology type differences via moderation analysis. In obtaining these findings, we enhance the understanding of wearable technology adoption. However, there are still other technological and non-technological factors that influence wearable adoption.

Further, in this study, we investigated the boundary conditions for the relationships between different determinants and wearable adoption from the perspective of culture (e.g., uncertainty avoidance, future orientation, and humane orientation), involving in total 11 countries. It can be seen that the analysis was mostly still limited in China, US, and Korea. Thus, with the development of the research related to wearable adoption in other countries, we encourage future studies to conduct a more in-depth analysis and robustness check on the cultural-related factors.

7. Acknowledgments

8. References

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