

Technology acceptance, interest in fitness and empowerment: Testing consumer responses towards a wearable technology advert

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INTRODUCTION

At a time when new technologies are constantly present, individuals' health has taken centre stage. A shift towards a performance society has affected individuals' professional and personal lives (Hillert & Marwitz 2006). In particular, the omnipresence of social media and new technologies is fostering both "self-surveillance" and "self-optimisation" and also a new form of "self-presentation", which is not without risks. The term "life logging" is commonly used to describe the continuous documentation of data that is used to discipline the human body to quantify the self (Selke 2013). According to Mau (2017), metric data has suddenly become a desired social value.

Conditioned by the introduction and continuous growth of wearable devices, consumers' interest in fitness and sport has risen. The data generated through the use of wearables is vital; it has the potential to involve individuals more strongly in their health care and ultimately to empower them (Hsiao and Chen 2018). At present, wearables are being used by almost one third of the US population (Statista 2018), and their use is predicted to increase in the near future: by 2022, the sales volume of wearables and fitness trackers is expected to amount to 190 million pieces (Statista 2018). This significant increase has been attributed to the ever-broadening scope of these gadgets' functionalities; they offer individuals a lot of health-related benefits and enable them to optimise individual performance as well as offering viable input to insurance companies, doctors and commercial companies (Wang et al. 2016). Yet it is unclear whether this number will be reached since data security and privacy are still listed as the prime reasons for why consumers refrain from using wearables altogether (Goodyear et al. 2017).

INVESTIGATING THE POTENTIAL OF WEARABLES

While wearables use is on the rise, the number of studies addressing these new gadgets and their relevance to individual health is still limited. Huberty and colleagues (2015) investigated how inactive middle-aged women reacted to wearable sensors and found

that, while ease of wear and the instant availability of information were seen as positive, the use of wearables had some downsides, such as the device's appearance and weight. Contrary results were found by Melton et al. (2016), who determined that wearables did not improve students' physical activity levels and sleep patterns. Following Freedson et al. (2012), these results could be attributed to the users' uncertainty as to what constitutes a proper wear time as well as the exact features of the device. These findings are in line with a study by Kerner and Goodyear (2017), who found that wearables "wear out" quickly; for instance, in the case of adolescents, individuals stopped using these devices if they did not manage to perform well in peer comparisons, which were often perceived as acts of surveillance and regulatory actions (Goodyear et al. 2017). Negative consequences can also be explained by motivation-hygiene theory (Herzberg 1959), whereby hygiene factors, such as system unreliability or routine constraints, might have prompted users to discontinue their use of the gadget (Buchwald et al. 2018).

While wearables may be beneficial to the users' health, many people are still unaware of their potential and functions; therefore, it is important to advertise their benefits. To the authors' knowledge, no study so far has investigated how they can be promoted and whether consumers' attitudes towards fitness and their attitudes towards new technologies might play a role in ad evaluation and behavioural intentions.

Additional research has addressed which aspects consumers are particularly interested in when learning about wearables. According to Hsiao and Chen (2018), (hedonic and utilitarian) usability constructs deserve consideration and might help to positively shape consumers' attitudes towards new technological devices. Likewise, research on health and sport has confirmed that advertising messages are more effective when they include hedonic elements, which are able to literally "draw in" consumers (Hong et al. 2017), alongside utilitarian values (Hong et al. 2017). Consequently, advertisers are advised to highlight how their products benefit and empower consumers in their daily routines (Parreno et al. 2013). For instance, advertisements stressing "perceived value" were found to increase not only the image of the promoted gadget but also the product's performance value (Yeh et al. 2016). Yet messages were most successful when they also integrated utilitarian aspects, as suggested by motivation theory (Venkatesh et al. 2003), since both intrinsic and extrinsic motivation (usefulness vs. enjoyment) are presumed to impact consumers' attitudes towards new technologies.

While wearables may be beneficial to users' health, their potential and functions are still unknown to many people; therefore, it is important to advertise their benefits. Nonetheless, the practice of advertising is not without criticism, as commercial messages for all kinds of products have been found to be deceiving and misleading, a problem that has even led to legal action (Top Class Actions 2019). To the authors' knowledge, no study so far investigated whether and how consumers' attitudes towards fitness and the attitudes towards new technologies influence consumers' ad evaluation and behavioural

intentions regarding a promoted wearable product as well as the extent to which the information contained in an ad can empower consumers.

STUDY PURPOSE

Thus, the present contribution seeks to develop a conceptual model whose main components are derived from self-determination theory (Ryan & Deci 2000; Mears & Kilpatrick 2008), the technology acceptance model (TAM; Davis 1985), the classical (persuasive hierarchy) ad evaluation model (Petty & Cacioppo 1981) and the consumer-self-empowerment model (Koinig 2016; Koinig et al. 2017). While technology acceptance has already been linked to fitness trackers and wearable technology (Spagnolli et al. 2014; Sol & Baras 2016), to date, no study dealing with these gadgets has taken advertising as a starting point when it comes to studying consumer empowerment.

CONCEPTUAL MODEL

The proposed model intends to establish whether consumers' attitudes towards fitness impact their evaluations of a YouTube ad promoting a fitness tracker (H1a), their product evaluations (H1b) and their purchasing intentions (H1c). Consumers' attitudes towards new technologies are predicted to influence their ad evaluation (H2a), product evaluations (H2b), as well as their purchase intentions (H2c). Moreover, consumers' ad evaluations are not just predicted to influence their product evaluations (H3a), which are then expected to influence their purchasing decisions (H4); consumers' direct responses towards the ad are also assumed to empower them to better understand the product's functionalities or its use (H3b). If consumers feel empowered and enabled, this is also presumed to positively shape their product evaluations (H5a) and their intentions to purchase the fitness tracker (H5b).

STUDY POPULATION AND STIMULUS AD DESIGN

For the present study, a total of 156 subjects were recruited in a mid-sized European city in spring 2018. In terms of age, respondents were between 18 and 66 years old. Women constituted around 60% of the total sample.

An existing Fitbit ad promoting the Fitbit Ionic served as the study's stimulus material.¹ The advert was 21 seconds long and was chosen because it emphasised the device's capacity to support users and empower them in their day-to-day business.

¹ The actual advert can be found at <https://youtu.be/F7qqtq9sLCo>.

All hypotheses were tested simultaneously for the complete dataset using IBM SPSS AMOS Version 25. The proposed model shows acceptable global fit measures (CFI = .939; IFI = .941; CMIN/DF = 1.700; RMSEA = .048).

STUDY RESULTS

Study results revealed that consumers' attitudes toward fitness ($M=5.6154$) did indeed exert a positive impact on their ad evaluations ($r=.284$, $p=.000$) as well as on their purchasing decisions ($r=.181$, $p=.000$), supporting hypothesis H1a and H1c. However, this variable did not impact consumers' product evaluations ($r=-.038$, $p=n.s.$), and, thus, hypothesis H1b has to be rejected. Consumers' attitudes towards new technologies ($M=4.7286$) were found to influence their ad evaluations ($r=.236$, $p=.004$), but they were not found to have an impact on their product evaluations ($r=.055$, $p=n.s.$) or on their purchasing intentions ($r=-.029$, $p=n.s.$). So, hypothesis H2a is confirmed, whereas hypotheses H2b and H2c are rejected. Consumers' evaluations of the ad ($M=4.7228$) were found to both positively shape their product evaluations ($r=.482$, $p=.000$; $M=5.0304$) and to empower them ($M=4.2821$). This means that the ad enables consumers to better understand the product and its features ($r=.696$, $p=.000$). Consequently, both hypotheses H3a and H3b are supported. Our analyses also confirm the direct influence of product evaluation on purchase intention ($r=.613$, $p=.000$; $M=4.2949$), lending support to hypothesis H4. And while consumers' product evaluations are linked to the empowerment they receive from the ad ($r=.293$, $p=.005$), this empowered state does not lead them to purchase the product ($r=.025$, $p=n.s.$). Thus, while hypothesis H5a is affirmed, hypothesis H5b has to be rejected.

DISCUSSION OF RESULTS AND IMPLICATIONS

The study's results underline that consumers' attitudes towards fitness do indeed influence their ad evaluations and purchasing intentions. In spite of the lack of a direct connection between attitude towards fitness and product evaluations, we find an indirect influence (via ad evaluation), rendering recipients' attitudes towards fitness a viable variable in the conceptualised model. While consumers' attitudes towards new technologies influenced their ad evaluations, they did not impact their product evaluations or purchasing intentions. Empowerment was linked to ad evaluations, and, in turn, influenced consumers' product evaluations. Once again, we only found evidence of an indirect influence on purchasing intentions (via product evaluation). In addition, the direct connection between product evaluations and purchasing intentions could be confirmed. For advertisers

promoting wearables and fitness products, the implications are as follows: given that consumers often lack guidance as to what to expect from wearables – as indicated in previous studies (Melton et al. 2016; Freedson et al. 2012; Buchwald et al. 2018) – marketers are advised to empower consumers by highlighting their gadgets' functionalities and specifics (i.e. utilitarian values) and emotional side (i.e. hedonic aspects) in their advertising messages (Hong et al. 2017; Venkatesh et al. 2003); this will enable them to make educated and informed purchasing decisions based on message characteristics. Yet, advertisers benefit from transparency and would benefit from self-regulating industry standards that guarantee the truthfulness of advertising content and also disclose how consumers' personal data is used. This is crucial given wearables' increasing importance and broader spectrum of use (IDC 2017).

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

There are several limitations to this study. First, the investigation was based on a rather small sample, limited to Germany and only looked at how consumers responded to one (online) advert. For this reason, we recommend not only replicating but also expanding the present study to different countries and for different ad stimuli; further research could also investigate whether certain response patterns are subject to cultural specifics. Future studies might also want to take socio-demographic parameters, including sex, age, or education, into consideration.

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