Consumers' Influences on Smart Fitness Apparel

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ABSTRACT

Wearable technology has increased in popularity in recent years, putting well-being and sustainable lifestyles at the forefront for its consumers. Smart apparel should be created with consumers' thoughts but at the forefront.

This project aims to calculate the wearable acceptability of smart apparel and the factors that influence a consumer's purchase intentions and attitudes toward wearable technology. We focus on social acceptability (design, aesthetic, self-expression, consequences, and other reflections), the Theory of Reasoned Action(TRA), well-being concerns, environmental concerns, and the consumer's attitude. Through our research, we hope to survey a group of college and staff through Qualtrics in order to identify a new or updated WEAR (Wearable Acceptability) Scale by the end of February.

INTRODUCTION

- According to Future Market Insights (2024), the smart fabrics market, valued at US$ 2.9 billion in 2021, is projected to reach US$ 14.8 billion by 2032.
- The smart fabrics market has seen growth with trends in advanced technology and functionality.
- Smart apparel (wearable technology or textile) is the term used for clothing and footwear with functional and communicative capabilities (Stephenson et al., 2020; See Figure 1).
- The evolution of the relationship between the human body and wearable technology contributes to consumer lifestyle patterns and their relationships to technology in their everyday lives (McCann, 2023)
  - increasing popularity in fitness apparel and wearable devices
  - enhancing healthy, sustainable lifestyle, and well-being
- In this study, smart fitness apparel was chosen as a focus for this study because wearable technologies can share attributes with other forms of apparel (including clothing and footwear) and still need to maintain the social acceptability associated with fitness apparel (Nam & Lee, 2020).
- Thus, smart fitness apparel should be created with consideration of consumers' judgments, environmental and communication objectives, reactions, or thoughts from other consumers and designed to be easily used and accessed.

METHODS

- Institutional Review Board (IRB) approval was obtained from the University's Human Subjective Review Committee before collecting data for this study.
- The study recruited participants in the United States aged 18 years old through Qualtrics as an empirical study.
- The online survey questionnaire consists of three sections:
  - Demographics (age, ethnicity, gender, education, occupation, income, etc.)
  - Open-ended questions related to the possible location of the smart fitness apparel (See Figure 2).
  - Multiple-item measurements on wearable technologies' acceptability, perceived usefulness, user interface, performance risk, and environmental and well-being concerns that are adapted and modified from previous research from 1- strongly disagree to 7- strongly agree (Chuah et al. 2016; Kim & Shin, 2015; Nam & Lee, 2020).
- The multiple-item measurements include questions for the proposed conceptual constructs using a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).
- We used frequency analysis to predict certain measurements' occurrence and assess our predictions' reliability.
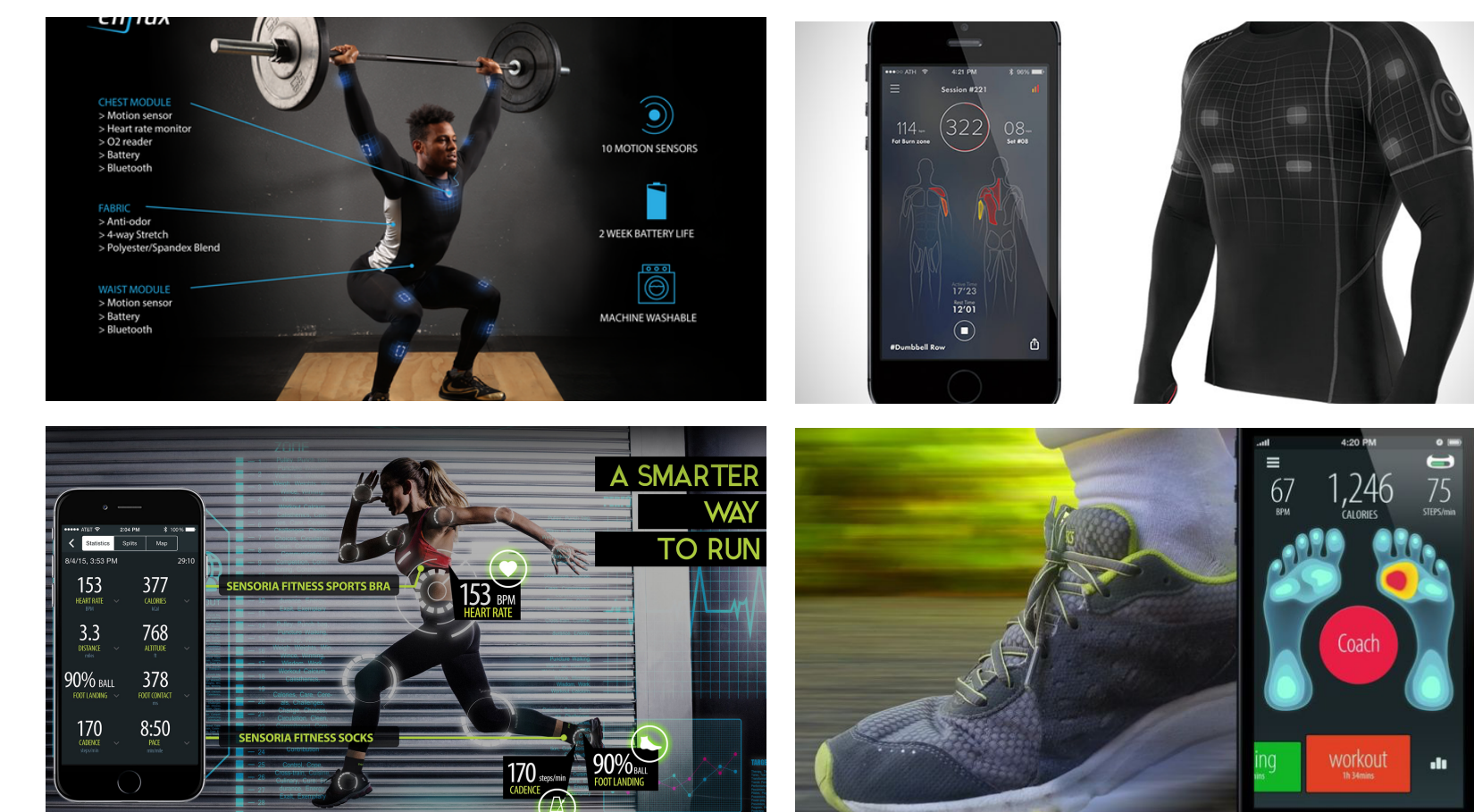

Figure 1. Smart Fitness Clothing and Footwear.

Figure 2. Possible location of the smart fitness apparel.

IMAGE CREDITS

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RESULTS

- The results show that the phrase "Sustainable Smart Apparel", most agreed on the breathability and durability of the product.
- Smart apparel positively feels like good, pleasant, & favorable.
- However, they are not always willing to pay extra and would rather look for a cheaper or more affordable alternative, with only 15.50% of participants being willing to pay more.
- Also, a more affordable option or don't use it enough in their daily lives to splurge on the costs of another form of wearable technology.
- For benefits of wearable technology, the participants mentioned: "tracking allergy sensitivity, managing overconsumption and environmental distress, tracking exercise and the skills obtained, well you are doing on your choice of exercise, as well as sustainability and economically friendly with a comfortable feel."
- The participants leaned more toward a wristband or watch that was breathable and durable.
- The following preferred benefits are allergy sensitivity tracking, consumption tracking, environmental distress, and exercise tracking.
- Regarding the preferred style of wearing smart apparel: The options being glasses, hat, t-shirt, wristband/watch, ring, pants, or shoes), the majority of participants chose wristband/watch.

CONCLUSION

- The relationship between well-being concerns and attitudes toward smart fitness apparel is complex and multifaceted.
- However, improving well-fitted clothing and understanding the impact of body shape differences on apparel fit problems are key factors.
- Furthermore, the development of automated custom-made clothing tailored to body shape has been explored, indicating a growing interest in personalized and well-fitted apparel.
- Technological advancements and materials for smart fitness apparel have consistently enhanced consumer perceptions and acceptance of such products.
- To recruit larger sample populations and evaluate hypotheses within a proposed conceptual framework, we have worked on this project.

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