Wearable Internet of Things for Health Care in Canada

Shannon School of Business, Cape Breton University

Marketing Research - MRKT 5312 Section 21

Dr. Ayse Ersoy

Group – 9 Methodology

|  |  |  |
| --- | --- | --- |
| Name | Student ID | Student Email |
| **Simarpreet Kaur** | 0285168 | CBU22CLBN@cbu.ca |
| **Srinivas Kyanam** | 0286299 | Cbu22cnhv@cbu.ca |
| **Simarpreet Singh Arora** | 0284320 | cbu22cjqh@cbu.ca |
| **Ishwer Singh** | 0281266 | CBU22CCDR@cbu.ca |

**Objective**

* To analyze and present the growth prospective of WIOT in healthcare management in Canada.

**Research Questions**

1. What are the major categories of users relying on WIOT devices for healthcare.
2. To identify the widely used application in health care.
3. What are the influencing factors for better user adoptability of WIOT devices.
4. What are the factors restricting the usage of WIOT devices.
5. How can the regulatory framework in Canada impact the adoption and deployment of WIOT in healthcare management, and what regulatory challenges need to be addressed?

**What is the target audience?**

The primary audience for Wearable Internet of Things (WIOT) in Canada is individuals who are interested in monitoring or taking care of health and taking proactive steps for the well being of there health. The age range of target audience is above 18 to elderlies age group. The secondary audience is Healthcare Providers (for diagnosis and treatment planning), Hospitals and Healthcare Facilities (for emote patient monitoring or diagnosis prevented diseases).

**What trying to measure?**

In this questionnaire we try to find out that how widely WIOT are use along with the major type categories people are relying on. Along with, what are the factors for better user adoptability of WIOT device and what are the factors which is restricting the customers/users.

**Sampling**

Sampling is the methodical process of choosing a subset of people from the larger population of wearable internet of things (WIOT) enthusiasts or users to participate in an online survey aimed at the WIOT audience. The sample, which is this subset, is selected to reflect the greater population of interest in terms of interests, technical literacy, demographics, familiarity, and other pertinent variables. Online surveys can use a variety of sample techniques, including non-probability and probability sampling. The sampling procedure is crucial for guaranteeing the reliability and validity of survey findings since it reduces bias and faithfully captures the attributes of the WIOT audience. In this survey the target audience is who is use or familiar with WIOT devices.

**What have we come up with?**

From the survey we can find out that what demographic customer according to there awareness find WIOT devices on different level of satisfaction. And what things are benefiting them and what disadvantage should work upon for better experience and growth. In the end we are able to find out new result that how the WIOT device put influence on traditional devices by what percentage.

For example: These result help to find out the new outcome in form of feed back that people are likely to tend to WIOT device comparing to traditional one if user is more on to benefits then disadvantages.

**Questions Relation:**

*Example***:** As in question 19 user are giving suggestion on the improvements in WIOT which is somehow related to satisfaction level (question 12) and suggestion, on the analysis of suggestion the data will be helpful for companies and improve sales for the target audience. Just like this mostly question are inter linked like benefits-disadvantages, application-type, future/growth-suggestion and all of them connected with demographic data as to find the target audience on reference with age, gender, occupation, awareness etc.

Demographic Information and familiarity

1. Gender:
2. Male
3. Female
4. Other

**Scale of measurement:** Nominal

**Analytical method:** Descriptive analysis

**Analysis:** Understanding the distribution of gender identities within the sample

1. Age:
   1. Under 18
   2. 18-24
   3. 25-34
   4. 35-44
   5. 45-54
   6. 55-64
   7. 65 or above

**Scale of measurement:** Interval

**Analytical method:** Frequency analysis

**Analysis:** Find the age demographics of the respondents and their potential implications for the study.

1. Location (Province/City) - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Occupation:
   * 1. Salaried
     2. Self-Employed
     3. Business
     4. Other

**Scale of measurement:** nominal

**Analytical method:** frequency analysis

**Analysis:** the occupational demographics of the respondents and their potential implications for the study

1. Have you ever used WIOT devices or applications?
   * 1. Yes
     2. No

**Scale of measurement:** Boolean/Binary

**Analytical method:** Frequency analysis

**Analysis:** WIOT usage among respondents and its potential implications for the study

1. How familiar are you with the concept of Wireless Internet of Things (WIOT)?
   * 1. Very familiar
     2. Somewhat familiar
     3. Not familiar at all

**Scale of measurement:** nominal

**Analytical method:** Frequency analysis

**Analysis:** Find out the level of familiarity with WIOT among respondents and its potential implications for the study.

1. Are you currently employed or studying in a field related to technology or IoT?
   * 1. Yes
     2. No

**Scale of measurement:** Boolean/Binary

**Analytical method:** Frequency analysis

**Analysis:** understanding the prevalence of employment or study in technology or IoT-related fields among respondents and its potential implications for the study.

Application

1. What category or application you are using wiot devices?
2. Epidermal skin technology
3. Health monitoring
4. Entertainment and gaming
5. Sports and fitness

**Scale of measurement:** Nominal

**Analytical method:** Descriptive statistics

**Analysis:** insights into the distribution of usage categories

Types

1. If it is Health monitoring, then please specify the type of wearable IoT device(s) you use (e.g., fitness tracker, smartwatch, medical monitoring device, etc.):
2. Healthcare device
3. Smart Glasses
4. Smart Watch
5. Activity Tracker
6. Other

**Scale of measurement:** Nominal

**Analytical method:** Descriptive statistics

**Analysis:** distribution of wearable IoT device types used for health monitoring

1. If it is another what device it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

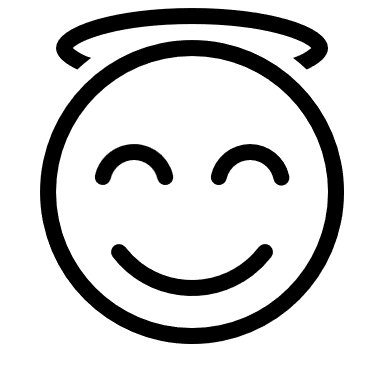
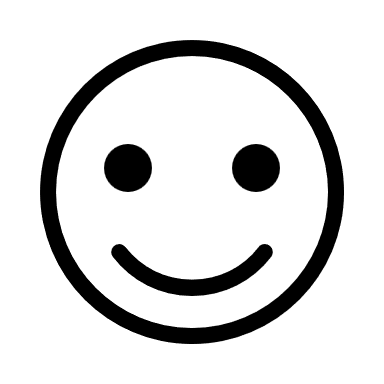
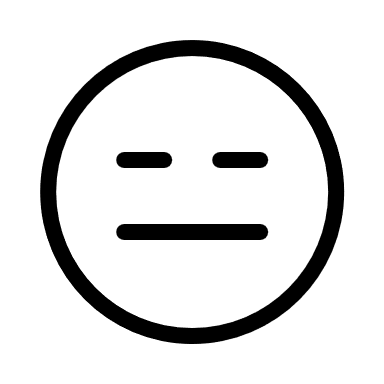
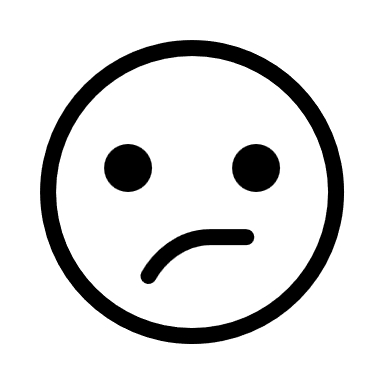
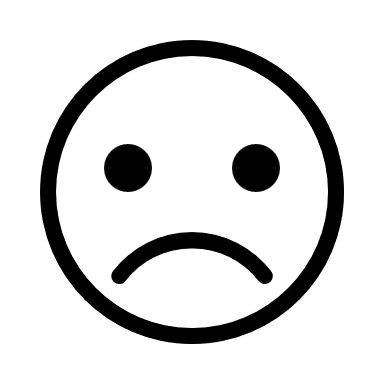
WIOT Benefits:

1. What factors influence your decision to adopt WIOT technologies? (Select all that apply)
2. Convenience
3. Efficiency
4. Cost-effectiveness
5. Security and Privacy Concerns
6. Environmental Impact

**Scale of measurement:** Nominal

**Analytical method:** Descriptive statistics

**Analysis:** focus on understanding the relative importance of different factors in shaping attitudes towards WIOT adoption

1. How satisfied are you with the performance and reliability of WIOT devices or applications you have used?
2. Very satisfied 
3. Somewhat satisfied 
4. Neutral 
5. Somewhat dissatisfied 
6. Very dissatisfied 

**Scale of measurement:** Ordinal

**Analytical method:** Descriptive statistics

**Analysis:** understanding the overall satisfaction with WIOT devices or applications and identifying any areas for improvement

1. Which features do you consider most important in a wearable IoT healthcare device? (Rank in order of importance):
   * 1. Emergency notification
     2. Fitness tracking
     3. Medication reminders
     4. Monitoring vital signs

**Scale of measurement:** Ordinal

**Analytical method:** Frequency Analysis

**Analysis:** understanding the relative importance of different features in a wearable IoT healthcare device as perceived by respondents.

WIOT Disadvantages:

1. What do you perceive as the primary challenges or barriers to the widespread adoption of WIOT (Wireless Internet of Things)? Please select all that apply.
2. Concerns about data privacy and security
3. High initial implementation costs
4. Lack of standardized protocols and interoperability
5. Limited availability of skilled workforce for WIOT deployment and management
6. Regulatory hurdles and compliance issues
7. Potential for job displacement due to automation
8. Other

**Scale of measurement:** Nominal

**Analytical method:** frequency analysis (selected barrier among respondents) and descriptive statistics (help identify the most common challenges or barriers perceived by respondents)

**Analysis:** understanding the perceived challenges or barriers hindering the widespread adoption of WIOT and identifying areas for potential improvement or intervention

1. Are there any specific concerns regarding privacy or security associated with WIOT (Wireless Internet of Things) technologies that you would like to highlight? Please check all that apply.
2. Data breaches or unauthorized access to sensitive information
3. Lack of control over personal data collected by WIOT devices.
4. Potential for surveillance or misuse of data by third parties
5. Vulnerabilities in WIOT devices or networks leading to cyberattacks.
6. Challenges in ensuring data integrity and authenticity.
7. Other

**Scale of measurement:** Nominal

**Analytical method:** frequency analysis (determine the prevalence of each selected concern among respondents) and descriptive statistics (help identify the most common privacy or security concerns associated with WIOT technologies)

**Analysis:** understanding the specific privacy or security concerns associated with WIOT technologies as perceived by respondents and identifying areas for potential improvement or intervention.

Future Growth and Opportunities:

1. Are you suffering from any of the disease?
2. Ischemic Heart Disease
3. Heart Failure Symptoms
4. Hypertension
5. Diabetes
6. others
7. None

**Scale of measurement:** Nominal

**Analytical method:** descriptive statistics

**Analysis:** understanding the prevalence of specific diseases among respondents and identifying potential health concerns within the population.

1. Would you be willing to share your wearable IoT data with your healthcare provider for better health management?
2. Yes
3. No
4. Unsure

**Scale of measurement:** Nominal

**Analytical method:** descriptive statistics

**Analysis:** understanding the attitudes and preferences regarding data sharing with healthcare providers for better health management among respondents

1. Using WIOT help you in any means for managing your healthcare?
2. Reduce Doctor Visit
3. Helps in Early Diagnosis
4. Help in taking precautions.
5. More cost friendly
6. None

**Scale of measurement:** Nominal

**Analytical method:** descriptive statistics

**Analysis:** understanding the perceived benefits of using WIOT for managing healthcare among respondents

1. What improvements or additional features would you like to see in future wearable IoT (Internet of Things) devices for healthcare? Please rank them all according to your preference.
2. Enhanced accuracy in health data monitoring (e.g., heart rate, blood pressure)
3. Integration of advanced sensors for detecting additional health metrics
4. Longer battery life for extended usage without frequent charging
5. Improved connectivity for seamless data transmission to healthcare providers
6. Incorporation of AI-driven analytics for real-time health insights
7. Customization options to cater to specific healthcare needs.
8. Other

**Scale of measurement:** Ordinal

**Analytical method:** frequency analysis (used to identify the most ranked improvements or features as most preferred)

**Analysis:** understanding the relative importance of different improvements or features in future wearable IoT devices for healthcare as perceived by respondents.

1. In which sectors or industries do you foresee the greatest potential for WIOT (Wireless Internet of Things) growth in Canada? Please check all that apply.
2. Healthcare
3. Agriculture
4. Transportation
5. Manufacturing
6. Energy
7. Retail
8. Other

**Scale of measurement:** Nominal

**Analytical method:** Descriptive statistics (help identify the most selected sectors or industries with potential for WIOT growth)

**Analysis:** understanding the perceived opportunities for WIOT growth in different sectors or industries in Canada.

Suggestions

1. What regulatory or policy measures do you believe are necessary to support the growth and development of WIOT (Wireless Internet of Things) in Canada? Please check all that apply.
2. Establishing standards for interoperability and data security
3. Providing incentives for research and development in WIOT technologies
4. Creating frameworks to address privacy concerns and data ownership rights.
5. Allocating spectrum and infrastructure resources for WIOT deployment
6. Developing guidelines for ethical use of WIOT data
7. Other Top of Form

**Scale of measurement:** Nominal

**Analytical method:** Descriptive statistics

**Analysis:** help to find the perceived requirements for regulatory and policy support to foster WIOT growth in Canada

1. Please make your preferences for following question. I will buy WIOT in future if company invest in:
   * 1. Brand Value/Market Value
     2. Cost effectiveness
     3. Better Products Features
     4. Easy Availability

**Scale of measurement:** Ordinal

**Analytical method:** Descriptive statistics (analyzing ordinal data could be employed, including calculating measures of central tendency and measures of dispersion)

**Analysis:** focus on the relative importance of different factors influencing the decision to buy WIOT devices in the future as perceived by respondents.

Feedback

1. Have you compared the readings of IOT vs traditional devices?
   * + 1. Yes
       2. No

**Scale of measurement:** Boolean/Binary

**Analytical method:** Frequency analysis

**Analysis:** whether respondents have engaged in comparison activities between IoT devices and traditional devices

1. If Yes, how do you rate the variation in terms of percentage?
   * 1. 5-10%
     2. 10-30%
     3. >30%

**Scale of measurement:** Ratio

**Analytical method:**  Frequency analysis

**Analysis:** gain insights into how they rate the variation in terms of percentage.