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Understanding Motivations of Generation Z Customers for Adoption of Smart Health Devices

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ABSTRACT
User motivations for monitoring their health, engaging in preventive care, and receiving personalised feedback, are driving the adoption of smart health devices. These devices, which include fitness trackers and smartwatches, provide real-time data on the amount of walking or running, heart rate during states of vigorous exercise and rest, and even when you began to fall asleep, or in deep sleep. This is all important wellness data for making decisions about how best to care for oneself. With the ease of constant monitoring, it enables preventative health management. Smartphone connectivity interfaces that are friendly to users, and numerous smart devices now include apps so that one can set his/her desired goals, receive reminders and track progress. Social functions like achievement sharing and virtual communities provide further motivation to use. Because of growing health consciousness and availability of smart health tracking in smartwatches, the health technology will soon be integrated into daily routine of people. This paper discusses motivational factors influencing smart health device adoption and highlights tools for engaging, relevant, and effective health behaviour change, which ultimately enhance sustained device use and human well-being. A sample of 227 participants was collected from participants in rural and urban regions. The factors that influence the adoption of Smart Health devices are found to be Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Social Influence & Peer Pressure, and Health Consciousness & Awareness.

Keywords: Gen z, Smart Health Device, Fitness trackers, Health Technology

Introduction

The smart health devices imply the smart devices we use to monitor personal health, like fitness trackers and smartwatches that have found a wide fanfare in the digital era. These devices feature sophisticated sensors and connectivity that enable users to monitor critical health indicators such as heart rate, activity levels, and sleep habits in real time. Recent growth of these technologies showcases the demand among consumers for proactive health maintenance (Cheung et al., 2021). This is important for technology developers, health care providers, and health policy makers, who are trying to promote a healthier lifestyle and better public health. A major force behind the uptake of smart health devices is the need for proactive health management. Al-Rawashdeh et al., (2022)

found that the consumers, especially younger generations, continue to be more health-conscious and want devices that give them real-time information on their physiological condition. This is one of the ways in which, by monitoring personal health metrics, users can make informed decisions about their daily routine, exercise regime as well as diet and build a sense of self-regulation and accountability. Research shows (add references here) that when people repeatedly use health-tracking tech, they are more apt to adhere to healthy habits, showing that reporting accurate information in the moment is highly productive for lasting behavioral change.

The adoption of smart health devices is largely affected by social influence. Self-tracking sensibilities rise within peer groups and can motivate the desire for sharing health achievements. Seeing friends, family, or colleagues use wearable health technology encourages many users to change and invest in them. This effect is also compounded by social comparison, where people are inspired to keep up or outpace their peers' fitness gains (Karahoca et al., 2018). Participation in virtual health communities and fitness challenges adds a layer of social engagement that encourages ongoing utilization, further bolstering the social value these devices provide. Dogra & Kaushal, (2021) shown that having social elements like challenges or progress sharing can dramatically increase a user's motivation and adherence to their fitness goals. Social elements like challenges or progress sharing can dramatically increase a user's motivation and adherence to their fitness goals. Perceived ease of use and usefulness are also critical for adoption of smart health devices. Technology Acceptance Model (TAM), a common theoretical framework for studying technology adoption argues that user engagement with a technology is likely to occur when it is treated as beneficial and easy to use. Lee & Shin (2019) also found that users are more drawn toward smart health devices that provide intuitive interfaces, seamless smartphone integration and personalised recommendations.

Due to advances in usability and functionality, adoption rates of wearable technology continue to skyrocket. Health motivation, which reflects a person's underlying drive to maintain or enhance their well-being, would further affect their propensity to adopt smart health devices (Mittal et al., 2024a). People characterised with high health motivation will be more likely to assume wearable health technologies as part of their routine as they proactively monitor and control their physical fitness and medical conditions. Huang & Yang (2020), investigated how unequivocally health-oriented people regard such devices as important means for reaching their well-being objectives, providing further support for maintaining adoption and usage over time.

Smart health device adoption isn't without its challenges, though; despite their advantages, there are barriers to widespread adoption. There are still substantial concerns regarding data privacy and security, as individuals are reluctant to share sensitive health information out of fear of possible breaches or misuse. The financial burden of buying these devices is yet another factor, especially for younger consumers who may not have a lot of extra money to spend. Technical complexity and the perception of a steep learning curve can also deter uptake, particularly among users less familiar with digital health tools. Transparency in data policies, cost-effective solutions and user-centric designs are key to overcoming these and other obstacles in building consensus around smart health technology.

Literature review

People increasingly opt for smart health devices now because they provide the best care for the individual's health. They help users manage their own body condition, making it difficult for them to ignore problems. Vitezić & Perić (2021) concluded that, by continuous monitoring of different

aspects of long-term physical and mental state of being, these devices make whole new contributions to health care.

One of the main reasons people use smart health devices is to pre-empt health problems before they arise. Catching health problems at an early stage can stop them from getting worse. devices like smartwatches and fitness bands can detect real-time heart rate, blood oxygen, and sleep patterns (Kim et al., 2022). If there are unusual changes, users can go to get medical help before things get serious. Some smartwatches can even check heart activity, helping people detect problems with their heart early enough.

For people with chronic health problems, it is now easier for them to keep an eye on their condition. People trying to avoid type two diabetes, with high blood pressure or heart disease must keep an eye on their health. tools like glucose testers, chest belts that measure heart rate, and blood pressure meters are helping them take control of the situation (Adapa et al., 2018). These devices give instant updates and show trends over time. It helps users and doctors alike in making better decisions related to treatment. Having access to all this information also means less need for them to keep going back to hospital.

Guisado-Fernández et al., (2019) observed that in addition to health problems, a lot of people find smart health devices useful for fitness and well-being. Pedometers, calorie counters, and heart rate monitors encourage people to keep moving around. Functions such as goal setting or notifications on how point scores are going help the user engage with the program. These tools assist with weight control, heart health and sports training, urging users to make good habits.

Mental health is still another important area where smart health devices offer assistance. Functions that track sleep, worry and relaxation exercises motivate users towards better living conditions.

Sleep monitors grab bad sleep habits; stress measurement tools suggest how to relax (breathing exercises, meditation). Technology plays an important part in the increasing popularity of smart health devices. Thanks to advances in ease of use, linking up with other tools, and the rise of artificial intelligence (AI), these devices are much more helpful for users. With real-time tracking and tailored suggestions, the tools have changed how we care for ourselves and regulate our health. Some intelligent products can offer specific recommendations simply by comparing your data information with others similar to it. However, at the same time, AI has certain limitations also related to privacy and ethical information sharing and processing (Mittal et al., 2024b).

One of the biggest reasons behind increased usage is that these things are so convenient (Hubert et al., 2019). On today's widespread health apps, it's possible to keep track of one’s body without going to a doctor. Real-time information can be gathered and makes it redundant to take blood samples or undergo any kind of clinical examination. Users can take their heart rate, measure how much oxygen they're taking in and then measure the activity level with just a little help from these devices. The synchronized data from these products even means that users will more easily keep track of their daily health condition by using mobile apps.
One of the best reasons to link your device up with additional digital tools is so that you will actually use it. The latest smart health devices are able to connect with mobile phones or home systems and health apps. Users can review long-term trends, set goals for themselves, and on the basis of their data get suggestions regarding better health practices. Dehghani (2018), observed that some products allow a doctor to check on the patient's day-to-day data, making medical care

apart from home. Details What's more, with smart door attendants, users can hear reminders for their medication or to drink water, and at the same time receive their exercise notes. Stitching it all together, these products help consumers have their health under better control.

Pal et al., (2018) also observed that with AI-driven features, the experience can be more pleasant and personalized. According to reviews, some smart-health products are equipped to link up with health data and AI gives advice on fitness, rest, stress, and so forth. There are even products which can be given voice orders, so that one may easily obtain an instantaneous health summary. AI can also identify recurrent patterns order to warn the user about possible medical situations before symptoms develop. On the whole, these smart features make it easier for people to choose good health practices.

Finally, social and emotional factors also influence the use of smart health devices. Feeling of being in touch with other users, getting inspired and having complete control of health, all make people eager for these products. In addition, social trends, peer support, and the demand for self-managed health, their own lives to manage further add to their usage.

How people use smart health tools is also influenced by their family and friends. Some of these products have social features like step challenges, leaderboards, and achieved graphics. Competitions and rewards encourage the user to stay physically active. Posting fitness results on social media also makes users feel part of a group, and at the same time entreats people to remember. Research shows that people who participate in group fitness activities are more likely to cultivate good habits.

For modern people, smart health devices are beyond just a health benefit. Nowadays, people think of high-end wearables as signifying modern living. They buy such a product not only for health reasons but because it's fashionable. This is especially so with the younger age group, among whom keeping up to date with technology has been all the rage for some time. To sell wearables as fitting into the fashion lifestyle Companies therefore pin their hopes across this trend. Marketing communication has played a huge role, especially in case of luxury brands in this sector (Das & Mittal, 2023).

An individual's sense of control is another reason why individuals use such devices. They will allow their user to get his or her health data directly and thus be an informed consumer. And while it can take a moment to heed the warning from one's doctor or shops, being able to track health data every day means that one does not really have to rest so much on doctors for one’s body all the time. Witnessing progress over time motivates users to stick with their program and keep plugging away toward their goals. Smart health devices also are loved for their economic value. Many people regard these devices as investments that help cut down on medical costs. Insurance benefits, workplace health programs, and lesser medical expenses etc. makes these devices even the cheapest things in long run.
A major reason why people go after these devices is to save money on medical care Costs. For example, users may detect diseases early and avoid expensive treatments by following the strain rate such data shows. Someone who has high blood pressure can track it on a regular basis and make small lifestyle changes before this becomes a severe health problem. Over time, such habits can save money in several different ways.

Insurance companies play a role as well in popularizing these devices Many providers offer special rewards for people using smart health trackers. Some insurers even work together with the producers of medical equipment to provide rebates on dates, thereby increasing usage. Both sides win out of this sort of programs, which encourage better health and less insurance claims. It helps customers as well as insurance companies.

Many companies encourage employees to use smart health devices as a normal part of wellness plans. Those who take part in fitness programs may be able to snare fruits such as health awards or step-based incentives. Management finds these programs valuable because Managers who Are healthy are more productive and take fewer sick days. With smart health technology included into company wellness planning, businesses act to help workers stay active and at the same time reduce the costs of healthcare.

There are a lot of benefits from this smart health approach. But in spite of these benefits, there are still some obstacles which prevent more people from using such devices. People's concerns about privacy, their distrust of accuracy and the price just being too high are some of the barriers. Addressing these issues will be very important for wider adoption of these health devices.

Objective

To study the factors affecting user motivation for the adoption of Smart Health Devices.

Methodology

A sample of 227 participants was collected from participants in rural and urban regions. The method of sampling was Random sampling for collection of data and examination was done using Explanatory Factor Analysis for results.

Findings

The table demonstrates demographic details. The sample constituted of 53.30% male, 46.70% female. Looking at the age, 34.80% are between 25 to 30 years of age, 36.56% are between 30 to 35 years of age, and 28.64% are above 35 years of age. With regards to region, 33.92% are from Rural region, 25.99% are from Semi-urban region, and 40.09% are from Urban region.

Participant's Details

Variables	**Participants**	**Percentage**
Gender		
Male	121	53.30%
Female	106	46.70%
Total	**227**	**100**
Ages in years		

25 to 30	79	34.80%
30 to 35	83	36.56%
Above 35	65	28.64%
Total	**227**	**100**
Region		
Rural region	77	33.92%
Semi-Urban region	59	25.99%
Urban region	91	40.09%
Total	**227**	**100**

"Factor Analysis"

"KMO and Bartlett's Test"

"Kaiser-Meyer-Olkin Measure of Sampling Adequacy"		.777
"Bartlett's Test of Sphericity"	"Approx. Chi-Square"	3825.248
	df	91
	Significance	.000

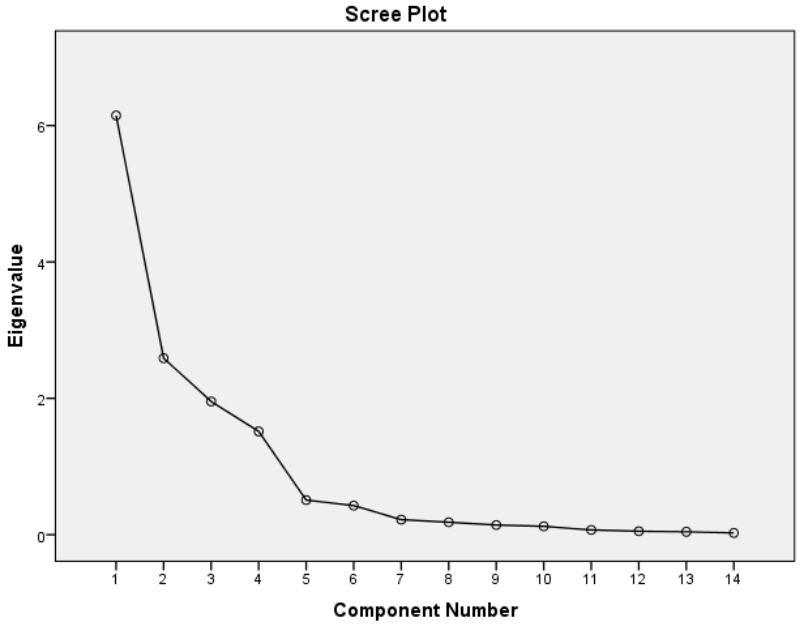
"KMO and Bartlett's Test", value of KMO is .777

"Total Variance Explained"

"Component"	"Initial Eigenvalues"			"Rotation Sums of Squared Loadings"		
	"Total"	"% Of Variance"	"Cumulative %"	"Total"	"% Of Variance"	"Cumulative %"
1.	6.147	43.910	43.910	**3.759**	26.853	26.853
2.	2.589	18.490	62.401	**3.630**	25.931	52.784
3.	1.954	13.960	76.361	**2.561**	18.292	71.076
4.	1.515	10.821	87.182	**2.255**	16.106	**87.182**
5.	.508	3.630	90.812			
6.	.427	3.050	93.863			
7.	.221	1.577	95.440			
8.	.183	1.305	96.744			
9.	.143	1.019	97.764			
10.	.122	.875	98.638			
11.	.070	.501	99.139			

12.	.051	.366	99.505			
13.	.043	.307	99.813			
14.	.026	.187	100.000			

The four factors contribute towards explaining total 87.182% of variance. Variance that is explained by Perceived Usefulness (PU) is 26.853, Perceived Ease of Use (PEOU) is 25.931%, Social Influence & Peer Pressure is 18.292%, and Health Consciousness & Awareness is 16.106%.



Scree Plot

"Rotated Component Matrix"

S. No.	Statements	Factor Loading	Factor Reliability
	Perceived Usefulness (PU)		**.950**
1.	Device provide real-time health monitoring like heart rate, blood oxygen	.951	
2.	Help prevent diseases and improve health outcomes	.898	
3.	Enable fitness tracking and goal setting for active lifestyles	.856	
4.	Digital health devices are useful for proactive health maintenance	.849	
	Perceived Ease of Use (PEOU)		**.959**

1.	Device are user-friendly and easy to operate	.953	
2.	It fit in with smartphones, health apps, and smart ecosystems	.907	
3.	The device requires minimal technical knowledge to use	.894	
4.	Rise of artificial intelligence (AI), these devices are much more helpful for users	.892	
	Social Influence & Peer Pressure		**.884**
1.	Friends, family, and social media impact adoption of digital devices	.927	
2.	Adoption is influenced by fitness influencers, celebrities, and online communities	.866	
3.	Word-of-mouth marketing or online reviews affect purchase decisions	.834	
	Health Consciousness & Awareness		**.821**
1.	Users are aware of lifestyle diseases like obesity, diabetes, hypertension	.935	
2.	Perceive smart health devices as tools for preventive healthcare	.925	
3.	Influenced by rising health concerns, especially after the COVID-19 pandemic	.594	

Factors of the study and its related variables

Perceived Usefulness (PU) is the first factor of the study, the variables it includes are Device provide real-time health monitoring like heart rate, blood oxygen, Help prevent diseases and improve health outcomes, enable fitness tracking and goal setting for active lifestyles, and Digital health devices are useful for proactive health maintenance. The second factor is Perceived Ease of Use (PEOU), its variables are Device are user-friendly and easy to operate, it fits in with smartphones, health apps, and smart ecosystems, The device requires minimal technical knowledge to use, and Rise of artificial intelligence (AI), these devices are much more helpful for users. Social Influence & Peer Pressure is the third factor, it includes variables like Friends, family, and social media impact adoption of digital devices, Adoption is influenced by fitness influencers, celebrities, and online communities, and Word-of-mouth marketing or online reviews affect purchase decisions. Last and fourth factor is Health Consciousness & Awareness, it includes variables like Users are aware of lifestyle diseases like obesity, diabetes, hypertension, Perceive smart health devices as tools for preventive healthcare, and influenced by rising health concerns, especially after the COVID-19 pandemic.

"Reliability Statistics"

"Cronbach's Alpha"	"Number of Items"
.890	14

Total reliability of 14 items that includes variables for factors affecting user motivation for adoption of Smart Health Device is 0.890.

Conclusion

Smart healthcare gadgets are transforming individual health management, giving you up-to-date data, insights which are tailored just for you, and even social network elements. This trend is driven by the need for self-care in terms of monitoring health proactively, the lifestyle effects of others around us, and convenience. You get useful information about your health from these devices: better data leads to new opportunities for early intervention and better decision-making on all health matters. Chandrasekaran et al., (2020) however, questions about data privacy, cost, and convenience remain obstacles to widespread adoption. To maintain this growth in the future, clear policies on data use and sharing, solutions that are affordable without compromising quality; more approachable designs must all be dealt with. As technology moves forward, health gadgets will become more and more a part of daily life. This will improve long-term health outcomes and reduce the costs of medical care for everyone. employers, insurers, and health care providers should all have their own part in promoting the adoption of these gadgets, by offering incentives or wellness programmes in the workplace (Park, 2020). At institutional level, AI can also play a great role in supporting knowledge management organisations manufacturing the smart devices as it contributes to the other sectors (Mittal et al., 2023). The authors recommend a spiritual and ethical approach to smart devices using marketing 3.0 for long term sustainability (Srivastav & Mittal, 2021). By overcoming these obstacles smart health technology will support healthier lifestyles and benefit everyone's health more generally. The factors that influence the adoption of Smart Health devices are Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Social Influence & Peer Pressure, and Health Consciousness & Awareness.

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