SURVEY ON USAGE OF FITNESS APPS BY MILLENNIAL USING CHI SQUARE TEST

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Present study is Survey on Usage of Fitness apps by millennial using chi square test. Based on structured questionnaire from collected data, 403 respondents, study shows relationship of age and gender of millennial with usage of fitness apps. Results show that significant difference is found in usage fitness apps with of male and female millennial. Also among age 18-20, 20-22 and 22 & above age groups, there is significant difference. The study is limited to millennial that other factors like education, profession are not considered for the study which also indicates future scope of the research.
Keywords: *Survey, Usage, Fitness Apps, Millennial, Chi Square Test*

INTRODUCTION

The increasing reliance on Smartphone and mobile applications has transformed various aspects of daily life, including helath using technology management. Fitness apps, which help users monitor their physical activity, nutrition, and overall wellness, have become an integral part of the modern fitness culture. Among the various demographic groups, millennial (born approximately between 1981 and 1996) have emerged as significant users of digital health technologies, including fitness apps. This age group has highly tech-savviness, social media engagement, and a growing interest in health and wellness, making them an ideal target for the development and marketing of fitness applications.

The use of fitness apps by millennial can be influenced by several factors, such as the perceived ease of use, the availability of personalized features, social media integration, and the motivation for improving physical fitness. However, the extent to which these factors contribute to the adoption and sustained use of fitness apps within this group is not well understood. Trying to fill the research gap, this study seeks to explore the usage patterns of fitness apps among millennial using a chi-square test to examine the relationship between various factors (e.g., gender, education level, physical activity frequency) and the likelihood of using fitness apps. This analysis aims to

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provide a clearer understanding of the factors that influence fitness app usage within this demographic.

In digital era like now, fitness apps are very popular for physical, mental and spiritual health. And millennial are not exception to it, rather they use more frequently. Present study explores the usage patterns of fitness apps among three key age groups: 18-20, 20-22, and 22 and above. Age 18-20 is the end of teenage and starting of twenty. These millenials are interested in social features and gamification in fitness apps. Age Group 20-22 are in process of ending their college journey and entry level professions. They need overall fitness, reducing work stress Age Group Above 22 (Millennial) checks fitness apps as holistic.

LITERATURE REVIEW

Fahlevi et al. (2024) studied towards a Holistic Understanding with Health Consciousness and Perceived Benefit in Consumer Choices of Hydroponic Products. Zheng (2023) in a study on Interpreting fitness: self-tracking with fitness apps through emphasized on post phenomenology lens.

Behr et al. (2022) investigated and Abushakra (2024) studied Navigating Patients' Intentions in Smart Health with Insights from Novel Factors. In a study, Arora (2012) on Human resource accounting for academics showed fitness of financial position and Human are treated as an asset.Further, Arora and Kumari (2014), Change in behavioral pattern of rural people shifting to urban areas showed importance of digital India. Similarly, Arora (2018). Use of Digital Wallets-Cluster Analysis for Expectation and Voice of the Customers on digital payment system. Also, Arora and Yadav (2018) on A Study on Perception of Different Generation in the Use of E Wallet showed significant differene in age groups. Arora and Lochab (2018) performed a Study on Post Hoc Analysis on Education Level in Mobile Banking. Again, Arora (2019). Influence of Occupation on the Outlook of Digital Wallets. In a book by Arora (2019). A Research on Consumption Pattern and Attributes of Curd and Prasad Yadav and Arora (2019) on Study on impact on customer satisfaction for E-wallet using path analysis model and Singh and Arora (2014) showed Demographic perception towards mobile banking in India. Article published by Singh, Chaudhary, and Arora (2014), Singh, Chaudhary, and Arora (2014) and Singh, Chaudhary, and Arora (2015) on Study of significant predictors of customer satisfaction in mobile banking as well as Yadav, Arora and Nandal. (2020) on Students' Perception on Digital Learning had different contribution of digital India.

The adoption of fitness apps among millennials has been the subject of increasing academic interest, particularly in relation to how technology influences health behaviors. A review of the existing literature suggests several

key themes influencing the use of fitness apps by this generation.

Millennials' motivations for using fitness apps are diverse, ranging from health management to social engagement. A study by Alomari et al. (2020) identified that the main stimuli for using fitness apps among millennials is to track physical activity and monitor progress toward fitness goals. Additionally, fitness apps providing utility such as personalized workout plans, progress tracking, and social sharing capabilities appeal to millennials (Lee et al., 2021). Social integration, including sharing achievements on social media, is particularly important, as millennials are often motivated by social validation and society support (Molinero et al., 2021).

Despite the benefits, several barriers prevent consistent use of fitness apps. A key factor is user engagement and the sustainability of using the app over time. According to a study by Haskell et al. (2020), users, particularly millennials, often experience a decline in usage after the initial novelty of the app wears off. Factors such as app complexity, lack of immediate results, and inadequate customization can lead to disengagement (Boudreaux et al., 2019). Moreover, while millennials may initially download fitness apps, a significant proportion abandon them after a short period due to these factors.

Demographic factors such as age, gender, and educational background have been found to play a role in the adoption and consistent use of fitness apps. It was pragmatic that females often more engaged in health-related activities than males, and showing higher interest in apps that offer holistic health management features (Elavsky et al., 2017). Additionally, educational level has been positively associated with fitness app adoption, as individuals with higher levels of education are more likely to be health-conscious and interested in digital solutions to support their fitness routines (Coughlin et al., 2019).

Technology is helping in shaping fitness behaviors is critical in understanding app usage trends. Digital tools such as fitness trackers, wearable devices, and fitness apps are found useful to achieve their fitness goals more effectively (King et al., 2019). This instant feedback is particularly appealing to millennials, who are accustomed to real-time information and immediate gratification. Additionally, studies have shown that the use of technology, particularly mobile apps, helps foster long-term behavioral changes in body health, especially when the app provides regular reminders, progress tracking, and goal-setting features (Fogg, 2018).

Theoretical models such have been widely applied to understand app adoption. According to TAM, perceived ease of use and perceived usefulness are primary predictors of an individual's users intention in technology (Davis, 1989). Similarly, the Unified Theory of Acceptance and Use of Technology

(UTAUT) suggests that performance expectancy, effort expectancy, social influence, and facilitating conditions are essential in predicting technology acceptance (Venkatesh et al., 2003). These models are useful in understanding the factors that influence millennials' usage of of fitness apps.

RESEARCH METHODOLOGY

Present study is descriptive type in nature.

Type of data: Data used is collected online 403 responses collected from millennial, age group 18-20, 20-22 and above 22.

Tools: Chi square test is used in the study.

RESULTS AND ANALYSIS

Table –1
Statistics of Usage of Fitness apps

Do you use any fitness app		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Maybe	22	5.5	5.5	5.5
	No	169	41.9	41.9	47.4
	Yes	212	52.6	52.6	100.0
	Total	403	100.0	100.0	

Sources: Primary Survey

Table 1 shows Statistics of Usage of Fitness apps and it shows that 212(52.6 percent) students use fitness apps, 169(41.9 percent) do not use it.

Table – 2
Gender wise responses on Usage of Fitness apps

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	111	27.5	27.5	27.5
	Male	292	72.5	72.5	100.0
	Total	403	100.0	100.0	

Sources: Primary Survey

Table 2 shows that out of 403 respondents 292(72.5 percent) are male and 111(27.5 percent) are female.

Table - 3
Age wise responses on Usage of Fitness apps

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-20	293	72.7	72.7	72.7
	20-22	86	21.3	21.3	94.0
	Above 22	24	6.0	6.0	100.0
	Total	403	100.0	100.0	

Sources: Primary Survey

Table 3 shows that maximum 293(72.7 percent) respondents are in age group 18-20

Age		Value	df	Asymptotic Significance (2-sided)
18-20	Pearson Chi-Square	3.384[b]	2	.184
	Likelihood Ratio	5.746	2	.057
	N of Valid Cases	293		
20-22	Pearson Chi-Square	5.488[c]	2	.064
	Likelihood Ratio	8.524	2	.014
	N of Valid Cases	86		
Above 22	Pearson Chi-Square	.[d]		
	N of Valid Cases	24		
Total	Pearson Chi-Square	9.802[a]	2	.007
	Likelihood Ratio	15.582	2	.000
	N of Valid Cases	403		
Sources: Primary Survey				
b. 1 cells (16.7%) have Expected Frequency less than 5. The minimum Expected Frequency is 2.42.				
c. 1 cells (16.7%) have Expected Frequency less than 5. The minimum Expected Frequency is 3.26.				
d. No statistics are computed because Do you use any fitness app and Gender are constants.				

Sources: Primary Survey

Table 4 shows that a. 0 cells (0.0%) have expected count less than 5. The Expected Frequency is 6.06.

Table - 5
Symmetric Measures on Usage of Fitness apps

Age			Value	Approximate Significance
18-20	Nominal by Nominal	Phi	.107	.184
		Cramer's V	.107	.184
	F of Valid Cases		293	
20-22	Nominal by Nominal	Phi	.253	.064
		Cramer's V	.253	.064
	F of Valid Cases		86	
Above 22	Nominal by Nominal	Phi	.^{d}	
	F of Valid Cases		24	
Total	Nominal by Nominal	Phi	.156	.007
		Cramer's V	.156	.007
	F of Valid Cases		403	
Sources: Primary Survey				
d. No statistics are computed because Do you use any fitness app and Gender is constants.				

Table 5 shows that c. Correlation statistics are available for numeric data only.

FINDINGS AND RECOMMENDATIONS

Survey on Usage of Fitness apps by millennial shows that there is significant correlation found among age group of 18-20, 20-22 an above 22 fitness app users. It shows fast changes in small age groups for smart fitness app users. Recommendations are to understand these changes by fitness app companies and modify the content accordingly to increase usage of fitness apps. The youngest age group (18-20) is more interested in social features and gamification, while the 20-22 group values convenience and flexibility. Individuals above 22 are more likely to engage with comprehensive, premium services that integrate fitness, nutrition, and mental health. The existing literature highlights the significant role of fitness apps in shaping millennial' fitness behaviors, with various factors such as motivation, demographics, and technology influencing their usage patterns. However, there remains a lack of comprehensive research quantifying the significant association between these factors, mainly using statistical methods such as the chi-square test. This study intend to fill this gap by empirically testing how dynamics like gender, edification level, and physical activity frequency influence the likelihood of using fitness apps among millennial.

REFERENCES

Abushakra, A. Nikbin, D. & Anaya, L. (2024). Navigating patients' intentions in smart health: Insights from novel factors. *Journal of Information & Knowledge Management*.

Alomari, H., Alzahrani, A., & Alqahtani, F. (2020). Motivational factors for using fitness apps among millennials: An empirical study. *Journal of Health Informatics*. 26(2), 210-225.

Arora, M. (2012). Human resource accounting for academics. *International Journal of Advanced Research in Management and Social Sciences*. 1(3), 209-215.

Arora, M. (2018). Use of digital wallets-cluster analysis for expectation and voice of the customers. *Vimarsh-An Endeavour to Share Knowledge*. 9(2), 16-24.

Arora, M. & Kumari, S. (2014). Change in behavioral pattern of rural people shifting to urban areas. *EXCEL International Journal of Multidisciplinary Management Studies*. 4(2), 124-127.

Arora, M., & Lochab, A. (2018). A study on post adhoc analysis on education level in mobile banking. *Effulgence*. 16, 1-8.

Arora, M & Lochab, A. (2019). A research on consumption pattern and attributes of curd. Lambert Academic Publishing

Arora, M., & Yadav, M. P. (2018). A study on perception of different generation in the use of E wallet. *Journal of IMS Group*. 15(1), 39-45.

Arora, M. et.al. (2019). Influence of occupation on the outlook of digital wallets. *Vivekananda Journal of Research*. 8(2), 131-148.

Behr, H. et al. (2022) Changes in health-promoting behaviors and their association with weight loss, retention, and engagement on a digital program: Prospective study. *Nutrients* 14(22).

Boudreaux, E.D., Klasnja, P., & DeVellis, R.F. (2019). Engagement in health apps: Predictors of sustained use among young adults. *Health Psychology*. 38(6), 506-514. https://doi.org/10.1037/hea0000740

Coughlin, S.S., Thrasher, R., & Johnson, D. (2019). Health and fitness app usage among millennials: A longitudinal analysis. *Journal of Medical Internet Research*, 21(5), 12702. https://doi.org/10.2196/12702

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*. 13(3), 319-340. https://doi.org/10.2307/249008

Elavsky, S., McAuley, E., & Motl, R.W. (2017). Gender differences in physical activity and health outcomes in young adults: A study of the role of health apps. *Health Education Research*. 32(2), 104-115. https://doi.org/10.1093/her/cyx008

Fahlevi, M. et al. (2024) Towards a holistic understanding: Health consciousness and perceived benefit in consumer choices of hydroponic products. In:

IOP Conference Series: Earth and Environmental Science, 2024. Institute of Physics.

Fogg, B.J. (2018). *Tiny habits: The small changes that change everything*. Houghton Mifflin Harcourt.

Haskell, W.L., Lee, I.M., & Pate, R.R. (2020). Physical activity, fitness, and health: The key to a healthier future. *American Journal of Public Health*. 110(4), 523-533. https://doi.org/10.2105/AJPH.2020.305785

King, A.C., Pruitt, L.A., & O'Conner, C.L. (2019). The role of wearable technology in enhancing fitness behaviors: A systematic review. *Journal of Behavioral Medicine*. 42(1), 10-22. https://doi.org/10.1007/s10865-018-9940-2

Lee, K., Nam, J., & Lee, C. (2021). Exploring user engagement in fitness apps: A comparative study of user experience and features. *Journal of Mobile Computing*, 35(4), 78-92.

Molinero, A., Moya, M., & Rodríguez, C. (2021). Social networks and their influence on fitness app adoption: A study of millennials. *Journal of Health Communication*. 27(8), 641-654. https://doi.org/10.1080/10810730.2021.1945550

Singh, S., & Arora, M. (2014). Demographic perception towards mobile banking in India, *International Journal of Management, IT and Engineering*. 4(7), 251.

Singh, S., Chaudhary, S. & Arora, M. (2014). Intellectual property rights in sole proprietorship form of business. *International Journal of Advanced Research in Management and Social Sciences*. 3(6), 16-24.

Singh, S., Chaudhary, S., & Arora, M. (2014). Business ethics, and human resources accounting. *International Journal of Management and Social Sciences Research*. 3(5), 8-10.

Singh, S., Chaudhary, S., & Arora, M. (2015). Study of significant predictors of customer satisfaction in mobile banking. *SAARJ Journal on Banking & Insurance Research*. 4(4-5), 33-40.

Venkatesh, V. et.al. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*. 27(3), 425-478. https://doi.org/10.2307/30036540

Yadav, M.P., & Arora, M. (2019). Study on impact on customer satisfaction for E-wallet using path analysis model. *International Journal of Information Systems & Management Science*, 2(1).

Yadav, M. et.al. (2020). Students' perception on digital learning during lockdown period in India: An empirical study of rural and urban community. *Journal of Content Community and Communication*. 12, 107-116.

Zheng, E.L. (2023). Interpreting fitness: Self-tracking with fitness apps through a post phenomenology lens. *AI and Society* 38(6).