Analysis of the user experience (UX) of a fitness app by gender

Análisis de la experiencia de usuario (UX) de una fitness app según género

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Abstract

Fitbe is a technological tool that facilitates the comprehensive management of sports spaces and helps users to practice physical activity. User experience is a key aspect to take into account when adopting the use of technological tools. The general objective is to analyse the user experience of sports centres with the Fitbe fitness app, as well as to examine the intention to use and exercise with the app in the future according to gender, age and level of education. A sample of 174 people (53 men and 121 women) was used. The user experience questionnaire (UEQ) was used. The results showed that pragmatic qualities had higher values than hedonic qualities, with statistically significant differences according to gender and educational level. A cluster analysis identified three groups according to the level of intention to use the Fitbe tool. Developers of digital tools and applications should consider the user experience when designing such systems to improve the user experience.

Keywords: Fitbe, user experience (UX), UEQ, intention of use, UTAUT 2 model.

Resumen

Fitbe es una herramienta tecnológica que facilita la gestión integral de espacios deportivos y supone una ayuda en la práctica de actividad física para sus usuarios. La experiencia del usuario es un aspecto clave a tener en cuenta a la hora de adoptar el uso de herramientas tecnológicas. El objetivo general es analizar la experiencia de usuario de centros deportivos con la fitness app Fitbe, así como examinar la intención de uso y de ejercitarse con la app en el futuro según el género, la edad y el nivel de estudios. Se utilizó una muestra de 174 personas (53 hombres y 121 mujeres). Se utilizó el cuestionario de experiencia del usuario (UEQ). Los resultados mostraron que las cualidades pragmáticas tuvieron valores superiores que las cualidades hedónicas, existiendo diferencias estadísticamente significativas según género y nivel educativo, pero no por edad. La segmentación de los usuarios según su nivel de intención de uso de la app Fitbe identificó tres grupos. El grupo mayoritario mostró una alta intención de uso de la app y estuvo formado por mujeres de edad media. Los desarrolladores de apps de fitness deberían tener en cuenta la experiencia del usuario a la hora de diseñar y desarrollar las apps de fitness, teniendo en cuenta la inclusión de gamificación para mejorar la experiencia del usuario.

Palabras clave: Fitness app, experiencia del usuario (UX), UEQ, intención de uso, modelo UTAUT 2.

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Introduction

The COVID-19 pandemic has spurred significant technological advancements on a global scale, particularly in the realm of mobile applications (apps) focused on health and fitness. These apps experienced a 13% increase (CMD SPORT, 2021), resulting in 17 million downloads of such apps in early 2022 (Statista, 2024). Consequently, sports organizations have had to adapt to the technological revolution by establishing a greater digital presence. This enhanced digital presence is essential for addressing the needs of their users and enhancing the quality of care provided. Thus, User Experience (UX) has become a pivotal aspect that reflects the success of an organization (Hinderks et al., 2019).

Oyibo and Vassileva (2021) emphasize that UX design is gaining increasing importance in the human-computer interaction system due to the necessity of designing usable, enjoyable, and stimulating systems. To appropriately define UX, it must be understood as a multidimensional concept (Boy, 2017). The most standardized definition can be found in ISO 9241-210 (ISO, 2019), which considers UX as the perceptions and responses of an individual resulting from the use and/or anticipation of the use of a product, system, or service.

Additionally, UX can be viewed as a holistic concept encompassing various emotional, cognitive, or physical reactions related to the specific use of a product (Hinderks et al., 2019). Nevertheless, Law et al. (2008) argue that the definition of UX should adopt a more holistic and unified approach that encompasses both hedonic and pragmatic aspects of the system. They consider hedonic aspects to be related to affective components such as beauty or enjoyment, while pragmatic aspects are linked to utilitarian components of the system, such as usability or utility.

In fact, for an enhanced UX, the product must be easy to use, efficient, and should incorporate elements that contribute novelty or aesthetics (Hinderks et al., 2019). It is crucial to consider that users often have a dual perspective on the product—either they adore it or disdain it. In this regard, Lassfolk (2023) asserts that users may discontinue product usage if they perceive it to be malfunctioning. In the fitness sector, it has been demonstrated that 25% of fitness apps downloaded by users cease to be used due to poor UX (Alturki & Gay, 2017).

The relationship between UX and the usability of an interactive app can be a decisive factor in user adoption (Burger et al., 2018). However, there is currently limited understanding of the relationship between UX attributes and user receptiveness to persuasive features of technology aimed at behavior change (Oyibo & Vassileva, 2021). Oinas-Kukkonen and Harjumaa (2008) differentiate six persuasive characteristics in UX, including goal-setting, rewards, cooperation, competition, social comparison, and social learning. In contrast, Ahn and Park (2023) identified five UX elements, such as hedonic values, user load values, expectation confirmation, pragmatic values, and social values.

Features that promote a fair and simple UX also support users' self-regulation skills and address exercise motives considered crucial for engagement in physical activity (Baretta et al., 2019). Some online services employ various techniques to enhance UX and increase user satisfaction with service adoption (Ahn & Park, 2023). One of the most common techniques is gamification (Deterding et al., 2011). Gamification can be defined as the application of game mechanics and elements in a non-game context to improve UX (Huotari & Hamari, 2012). Recently, Jang and Park (2022) observed that gamified apps are significantly influenced by positive emotions, while negative emotions pose a barrier.

Within the sports sector, fitness apps can employ gamification to enhance UX, enabling users to achieve their goals through proper app design and development (Li & Kim, 2023). Users of fitness apps expect them to have an easy-to-use interface, intuitive navigation, and feedback on their progress for an improved UX (Al-Shamaileh & Sutcliffe, 2023). Additionally, these authors emphasize the importance of system and app personalization for a better UX.

Studies relating UX to the intention to use fitness apps are scarce in the literature. Despite recent attention to the intention to use in the context of fitness and sports apps, as evidenced by recent reviews (Angosto et al., 2020, 2023), it has not yet been correlated with UX. Various models of technology acceptance and adoption appear in current literature, with the Technology Acceptance Model (TAM) proposed by Davis (1989) being the most widely used. TAM serves as the foundation for other derived models, notably the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003) or its extended version, UTAUT2 (Venkatesh et al., 2012). These models identify factors influencing the adoption and use of technology by users.

According to the Theory of Reasoned Action, intention to use determines a person's actual behaviour based on their level of intention to engage in that behaviour (Fishbein & Ajzen, 1975). Therefore, it is essential to undertake new studies that relate UX to a theory on the intention to use apps to identify attributes influencing the user's actual behavioural intention. For example, Petre et al. (2006) argue that UX influences the perception of value, service quality, and customer loyalty. A recent study also suggests that UX, along with the effectiveness of a fitness app, can help users achieve their goals, thereby increasing retention and loyalty (Li & Kim, 2023).

Thus, this study aims to analyze the UX of sports centers using the Fitbe fitness app and examine the intention to use and exercise with the app in the future based on gender, age, and education level. As a secondary objective, it seeks to analyze user profiles and experiences based on their level of intention to use the fitness app.

Materials and Methods

Participants

The analysis involved a sample of 173 users of the Fitbe app, with 30.8% being male, 68.6% female, and 0.6% identifying as non-binary. Regarding the age distribution of users, 29.5% were under 35 years old, 54.9% were between 35 and 54 years old, and 15.6% were 55 years or older. Finally, concerning the level of education, 34.1% had no university education, 48.6% of users had completed university studies, and 17.3% had additional postgraduate studies (master's and/or doctoral degrees).

Instruments

The instrument employed was the User Experience Questionnaire (UEQ), developed by Laugwitz et al. (2008) with the primary goal of enabling a rapid and immediate measurement of user experience. This questionnaire is structured with 26 items distributed across six dimensions (Schrepp et al., 2014):

1. *Attractiveness:* General impression of the product. Do users like it or not? Items: annoying/pleasant, good/bad, unpleasant/pleasant, unattractive/attractive, friendly/unfriendly.

2. *Transparency:* Is it easy for users to become familiar with the product? Items: incomprehensible/comprehensible, easy to learn/hard to learn, complicated/simple, clear/confusing.

3. *Efficiency:* Can users accomplish their tasks without unnecessary effort? Items: fast/slow, inefficient/efficient, impractical/practical, organized/disorganized.

4. *Controllability*: Does the user feel in control of the interaction? Items: unpredictable/predictable, obstructive/supportive, secure/insecure, meets expectations/does not meet expectations.

5. *Stimulation:* Is it exciting and motivating to use the product? Items: valuable/inferior, boring/exciting, uninteresting/interesting, motivating/demotivating.

6. *Novelty:* Is the product innovative and creative? Items: creative/boring, inventive/conventional, ordinary/avant-garde, conservative/innovative.

Subsequently, a sociodemographic data questionnaire was administered, collecting variables such as gender, age, educational background, frequency of sports practice, session duration, and fitness experience. The items of the usage intention scale were adapted from the study by Ferreira-Barbosa et al. (2023).

The response scale was a seven-point Likert scale, with 1 being the most negative and 7 the most positive (e.g., 1 for annoying and 7 for pleasant). Finally, the reliability of the scales was analyzed through Cronbach's Alpha. For the Attraction and Appearance scale, a result of .94 was obtained, for the Efficiency and Controllability scales, a result of .87 was achieved, for the Stimulation scale, it was .92, and for the Novelty scale, it was .95.

Procedure

An online questionnaire was administered through the Le Sphinx platform, with each user allocated a time frame of 5 to 10 minutes to complete the test. The questionnaire was sent as a notification to each Fitbe app user by the fitness center administrators via the platform. Responses were collected from March 17 to March 27, 2023. Once the database was generated, the data were converted from the original 1 to 7 scale to a scale ranging from - 3 to 3. In other words, a response of 1 in the questionnaire was transformed into - 3, and a response of 7 was transformed into 3, and so on. This conversion was carried out under the assumption that the study's target population was more accustomed to positive scales. Thus, scoring on a positive scale was deemed more understandable than considering both positive and negative options.

Statistical Analysis

For the evaluation of the collected data, two distinct methods were employed. First, a Microsoft Excel spreadsheet specifically designed by the User Experience Questionnaire (UEQ) developers was used to thoroughly examine user experience profiles (The UEQ Team, 2018). Simultaneously, IBM SPSS Statistics version 28.0 was utilized for a more in-depth analysis. Regarding metrics, quantitative variables were described by calculating the mean and standard deviation, while qualitative variables were described through frequency and percentage.

To assess the distribution of variables, the Kolmogorov-Smirnov test was applied, revealing that these variables did not follow a normal distribution. Given this result, non-parametric statistical techniques were employed. In this context, the Mann-Whitney U test was used to contrast differences between genders, and the Kruskal-Wallis test was employed to compare differences among groups of different ages, educational levels, and intentions of using the fitness app.

A cluster analysis was also conducted to analyze the profile of sports center users, using the intention of using the fitness app as the dependent variable. Both hierarchical and non-hierarchical (k-means) methods were employed for optimal

results. The hierarchical cluster analysis used the Ward Method for grouping, and the squared Euclidean distance for similarity measures, following the guidelines proposed by Romesburg (1984). Subsequently, the non-hierarchical k-means analysis was conducted using the cluster centers identified in the hierarchical cluster analysis.

Once the ideal cluster solution was determined according to the criteria outlined by Hair et al. (2014), scores for variables not included in the cluster analysis were identified. Additionally, contingency tables for categorical variables were created for the comparison of sociodemographic profiles, using the Chi-square test (Khalilzadeh & Tasci, 2017).

The significance level was set at $p \leq .05$. The effect size of the considered statistics was estimated following the guidelines provided by Domínguez-Lara (2018).

Results

General Analysis

Figure 1 displays the overall means of the different dimensions of the user experience. Considering the benchmarks of the various variables in the scale's database, transparency emerged as the most noteworthy aspect with a mean of 1.61, placing it in the 'good' range. Within the range of scores above the mean, transparency (M = 1.61) and efficiency (M = 1.36) stood out. Finally, at the boundaries of the ranges, either above or below the mean, were attractiveness (M = 1.18), controllability (M = 1.17), and, as the lowest value, novelty, with a score of .70.

Figure 1
Benchmark and overall results for user experience variables
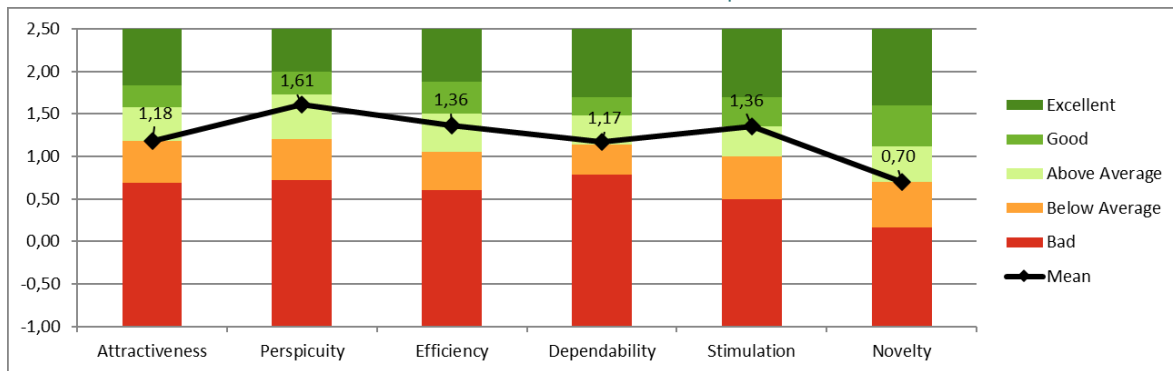
Results by gender

The results according to gender (Table 1) indicated that overall, women had a higher assessment of the experience than men across all variables. Both genders rated transparency higher (Men = 1.21 ± 1.2; Women = 1.79 ± 1.4), followed by stimulation (Men = 1 ± 1.3; Women = 1.56 ± 1.3). Conversely, novelty was the lowest-rated variable for both genders (Men = .43 ± 1.3; Women = .83 ± 1.5). Women exhibited a high intention to use and exercise, while men showed a moderate intention to exercise and a relatively neutral intention to use.

Table 1
Comparative results of user experience based on gender

Variables	Male		Female		U Mann-Whitney	R_{bis}
	M	SD	M	SD		
Attraction	0.82	1.3	1.36	1.3	2213.5**	.285
Transparency	1.29	1.2	1.79	1.4	2292.0**	.247
Efficiency	1.01	1.2	1.54	1.2	2208.0**	.285
Controllability	0.95	1.1	1.44	1.2	2207.0**	.289
Stimulation	1.00	1.3	1.56	1.3	2244.0**	.263
Novelty	0.43	1.3	0.83	1.5	2492.0*	.194
Intention of use	0.74	1.6	1.64	1.4	1986.0***	.361
Exercise intention	1.21	1.2	1.78	1.1	2178.0***	.298

Note: Sig.: significance; *p < .05; **p < .01; ***p < .001. Rbis: biserial correlation; .10: small effect; .30: medium effect; .50: large effect.

All variables showed statistically significant differences by gender ($p < .05$). It is important to note that the effect demonstrated by the different variables was moderate in usage intention ($R_{bis} > .30$), while attractiveness, efficiency, controllability, and exercise intention had an effect close to a moderate level.

Results by age

The comparative results based on age are presented in Table 2. Users aged over 55 had the highest scores, followed by users under 30 and adults between 35 and 54 years old. The variables best evaluated in the user experience were, first, transparency, and second, efficiency, while novelty was the least valued aspect.

In contrast, the results considering the intention to use and exercise showed that users under 35 years old had the highest scores compared to other age groups, albeit at a moderate level with 1.69 ± 1.4 and 1.80 ± 1.0, respectively. Middle-aged users (between 35 and 54 years old) had lower values in both usage intention ($M = 1.16 ± 1.6$) and exercise intention ($M = 1.49 ± 1.3$). There were no statistically significant differences based on age, and the effect size did not reach values considered to be of minimum effect in any variable.

Table 2
Comparative results of user experience based on age

Variables	Under 35 years		Between 35 and 54 years		55 years or older		H-K-W	η^2_H
	M	*SD*	*M*	*SD*	*M*	*SD*		
Attraction	1.14	1.2	1.11	1.4	1.54	1.1	2.09(2)	.012
Transparency	1.64	1.4	1.52	1.4	1.85	1.2	1.15(2)	.007
Efficiency	1.32	1.2	1.33	1.2	1.58	1.1	1.11(2)	.006
Controllability	1.33	1.1	1.22	1.2	1.44	1.1	0.84(2)	.004
Stimulation	1.25	1.4	1.29	1.4	1.77	1.0	2.12(2)	.012
Novelty	0.49	1.2	0.70	1.5	1.08	1.3	3.16(2)	.018
Intention of use	1.69	1.4	1.16	1.6	1.43	1.3	4.47(2)	.025
Exercise intention	1.80	1.0	1.49	1.3	1.59	1.1	1.68(2)	.010

Note: H-K-W: Kruskal-Wallis H; η^2H: Kruskal-Wallis Eta-squared; .04: minimum required effect; .25: moderate effect; .64: strong effect.

Results by level of education

Table 3 presents comparative results based on the level of education. Users without university education had a better user experience (UX) with the fitness app compared to users with university or postgraduate studies. Regarding UX attributes, transparency and stimulation were the most highly rated attributes for users without university education, while for users with university education, transparency and efficiency, and for users with postgraduate studies, transparency and controllability were the best-rated attributes. Novelty had the lowest score in all groups.

Table 3
Comparative results of user experience based on education level

Variable	Non-University		University		Postgraduate		H-K-W	η^2_H
	M	*SD*	*M*	*DS*	*M*	*DS*		
Attraction	1.63	1.2	.95	1.3	0.98	1.3	9.68(2)**	.056
Transparency	1.89	1.3	1.40	1.4	1.64	1.2	5.30(2)	.031
Efficiency	1.69	1.1	1.20	1.2	1.18	1.2	6.80(2)*	.040
Controllability	1.55	1.2	1.12	1.2	1.25	0.9	5.04(2)	.029
Stimulation	1.77	1.2	1.16	1.4	1.08	1.3	10.68(2)**	.062
Novelty	1.23	1.3	0.43	1.4	0.38	1.3	11.71(2)**	.068
Intention of use	1.69	1.2	1.10	1.5	1.42	1.7	5.71(2)	.033
Exercise intention	1.93	1.0	1.37	1.2	1.58	1.3	7.08(2)*	.041

Note: H-K-W: Kruskal-Wallis H; *p < .05; **p < .01; ***p < .001. η^2H: Kruskal-Wallis Eta-squared; .04: minimum required effect; .25: moderate effect; .64: strong effect.

Concerning behavioural intentions, users without university education exhibited moderately high intentions to use and exercise (Usage = 1.69 ± 1.2; Exercise = 1.93 ± 1.0), with users with postgraduate studies showing moderate intentions (Usage = 1.42 ± 1.7; Exercise = 1.58 ± 1.3), while users with university education had moderate-low intentions (Usage = 1.10 ± 1.5; Exercise = 1.37 ± 1.2). The results revealed statistically significant differences ($p < .05$) in attractiveness, efficiency, stimulation, novelty, and exercise intention. Considering the effect of variables, all significant variables reached the minimum required effect of .04, with novelty having the highest effect.

Cluster analysis

Table 4 depicts the sociodemographic profile of user clusters based on the level of intention to use the Fitbe fitness app. To achieve this, a cluster analysis was conducted, considering items related to the variable 'intention to use the Fitbe fitness app.' Various solutions were compared for two, three, and four groups, with the most suitable solution being a three-cluster solution.

Table 4
Comparative results of sociodemographic data based on the level of intention to use the fitness app

Variables	High intention		Neutral		Low intention		χ^2	V
	N	%	N	%	N	%		
Gender								
Male	18	18.9	24	42.1	11	55.0	15.7(4)**	.214
Female	76	80.0	33	57.9	9	45.0		
Non-Binary	1	1.10	-	-	-	-		
Age								
Under 35 years	35	36.8	12	21.1	4	19.0	9.85(4)*	.169
Between 35 and 55 years	47	49.5	32	56.1	16	76.2		
55 years or older	13	13.7	13	22.8	1	4.8		
Education level								
Non-University	34	35.8	21	36.8	4	19.0	6.56(4)	.138
University	41	43.2	31	54.4	12	57.1		
Postgraduate	20	21.1	5	8.8	5	23.8		

Note: *$p < .05$; **$p < .01$; ***$p < .001$; V: Cramer's V; .05: small effect; .15: medium effect; .25: large effect.

Group 1, labeled 'High intention,' constituted 54.9% of the sample and represented users who scored high in the intention to use the Fitbe fitness app ($M = 2.44 ± .5$). This group was predominantly composed of women (80.0%) aged between 35 and 55 years (49.5%) with university education (43.2%). Group 2, labeled 'Moderate intention,' exhibited an almost intermediate level of intention ($M = .67 ± .5$) and represented 32.9% of the sample. This group consisted mostly of women (57.9%), aged between 35 and 55 years (56.1%), with university education (54.4%). Finally, Group 3, labeled 'Low intention,' was the smallest group, representing 12.1% of users with a moderately negative intention ($M = - 1.62 ± .8$). Their profile comprised mainly men (55.0%) aged between 35 and 55 years (76.2%) with university education (57.1%).

The results revealed statistically significant differences ($p < .05$) in both gender and age distribution. However, considering the effect size, the level of education showed a small effect on the distribution of education among clusters, while the effect on gender and age was moderate.

Finally, analyzing the results of the clusters based on the level of intention to use (Table 5) in the fitness app experience showed statistically significant differences in all variables ($p < .001$). Scores decrease as intention decreases, with transparency being the most highly rated aspect of the experience in all groups. However, the second most valued aspect in the 'High intention' group was efficiency, in the 'Moderate intention' group it was stimulation, and in the 'Low intention' group, it was controllability. Novelty remained the factor with the lowest score in all groups and also showed the least effect. The effect of all variables was of a moderate nature, with attractiveness and efficiency being the most influential aspects.

Table 5
Comparative results of user experience based on the level of intention to use the fitness app

Variables	High intention		Neutral		Low intention		H-K-W	η^2_H
	M	DT	M	DT	M	DT		
Attraction	1.83	0.9	0.77	1.1	- 0.61	1.0	66.9(2)***	.389
Transparency	2.19	1.1	1.18	1.3	0.14	1.3	52.6(2)***	.306
Efficiency	1.96	0.9	0.95	1.0	- 0.20	1.1	63.8(2)***	.371
Controllability	1.84	0.9	0.84	1.0	0.00	1.1	60.3(2)***	.350
Stimulation	1.93	1.1	1.14	1.0	- 0.67	1.2	60.5(2)***	.352
Novelty	1.26	1.3	0.36	1.0	- 0.96	1.1	46.5(2)***	.270
Exercise intention	2.30	0.7	1.07	0.9	- 0.14	1.0	91.6(2)***	.533

Note: H-K-W: Kruskal-Wallis H; *p < .05; **p < .01; ***p < .001. N2h: Kruskal-Wallis Eta-squared; .04: minimum required effect; .25: moderate effect; .64: strong effect.

Discussion

This study aimed to analyze the user experience of fitness centers with the Fitbe fitness app and understand the intention to use and exercise with the app in the future based on gender, age, and education level. As a secondary objective, the study aimed to analyze user profiles and experiences based on the level of intention to use the Fitbe app. The User Experience Questionnaire (UEQ) is a widely used tool in UX evaluation. However, Laugwitz et al. (2008) emphasized that using a standard questionnaire may not comprehensively assess UX, addressing the complexity of UX itself.

The overall results indicated that the UEQ scales identified the most prominent attributes as the persuasive qualities of transparency and efficiency, and stimulation within the hedonic quality. However, users did not perceive the Fitbe app as novel. These results may suggest that the Fitbe app is similar to other fitness apps they have used before. Furthermore, none of the scales achieved a good or excellent score, indicating the need for a more attractive platform in the future that can enhance both pragmatic and hedonic attributes.

A study on the UX evaluation of an eye-tracking device showed scores above one point in all six attributes, with transparency being the most valued variable (Burger et al., 2018). Although this study yielded similar results, novelty received a score below one point. In a similar study, Oyibo and Vassileva (2021) found that perceived utility and aesthetics had the strongest relationship with users' receptivity to persuasive features of a fitness app. Other studies that have examined UX in physical activity-promoting games for children found that children perceived the games as easy to play, motivating, attractive, interactive, and promoting increased physical activity (González et al., 2016; Oyelere et al., 2022).

On the other hand, Weigl et al. (2021) compared the UX of three cycling apps and found no differences in any UX attribute between the different apps. The authors suggested that the absence of differences may be because all three apps are constantly being developed and updated by professional programmers. In a context outside of fitness, another study compared users of Skype and Amazon, both of which had a positive or neutral impression of UX (Hinderks et al., 2019). These authors found that pragmatic qualities (transparency, efficiency, and reliability) had higher values than hedonic qualities (stimulation and novelty).

Regarding gender results, women had a better experience than men, with significant differences found in all scales. These results could be influenced by the fact that the number of female participants was double that of male participants. Additionally, the two most prominent UX attributes perceived by women were transparency and stimulation, while for men, the second most valued attribute was efficiency. Therefore, considering these results, women seek the Fitbe app to be stimulating for their daily physical activity, showing moderately high scores in the intention to use the app and exercise. On the other hand, men slightly valued the practical aspect of the Fitbe platform, meaning that the app was useful for monitoring and tracking their physical exercise.

There are few studies in the academic literature that have compared UX based on sociodemographic variables. The existing evidence found no significant differences by gender in any UX quality when comparing Skype and Amazon users (Hinderks et al., 2019). It is essential to note that perceived aesthetics have a strong relationship with users' receptivity to the overall perceived persuasion of the fitness app (Oyibo & Vassileva, 2021).

Regarding age, users over 55 had a better UX, while those under 30 had a poorer UX. Older adults found the Fitbe app accessible, easy to use, and motivating to encourage physical activity. On the other hand, younger individuals, more

accustomed to using technologies, did not consider the Fitbe app as novel and were not greatly attracted to it. Although young users had the worst UX, they were the ones indicating a higher intention to use and exercise using Fitbe.

The results also demonstrated that educational level was a crucial factor to consider in the context of UX. Users with lower educational attainment experienced a higher level of UX, which diminished with increasing levels of education. The key attributes for users, considering their educational level, were attraction and hedonic qualities (stimulation and novelty). Consequently, higher education implies greater critical thinking when addressing emotional factors in users with university or postgraduate studies.

Considering another demographic factor in a non-fitness context, Hinderks et al. (2019) identified cultural differences, as English, Spanish, and German users evaluated UX differently in both Skype and Amazon. Cultural disparities often entail distinct quality requirements for the same product; for instance, German culture values reliability and functionality more, while English culture pays more attention to the aesthetics, durability, and price of the product (Hoffmann et al., 2004).

Finally, cluster analysis identified the existence of three user groups based on their intention to use the Fitbe app. The most representative group comprised women aged 35 to 55 with a university education, whereas users with lower intention to use the Fitbe app were middle-aged men with university or postgraduate education. Gender and age were differentiating factors, with significant differences between the groups. The highest representation of young users was found in the high-intention group. Although the level of education did not show significant differences, a higher proportion of users with more education was located in the low-intention group.

The UX attributes received high scores in most aspects, with pragmatic qualities standing out above hedonic attributes. Conversely, users with low intentions exhibited a negative UX, though they constituted the least representative group.

Herrmann and Blackstone (2021) did not find a strong influence of fitness app usage on exercise behaviours. To enhance usage intentions, Deterding et al. (2011) have suggested that apps often incorporate gamification to influence UX and foster long-term loyalty. Proactive and personalized features integrating behavioural, psychological, and contextual training to provide adaptable exercise plans were deemed relevant for sustaining long-term engagement with physical exercise (Baretta et al., 2019).

This study has several limitations. Firstly, the lack of generalizability of results due to convenience sampling based on sample accessibility. Another limitation arising from the first is the uneven distribution of participants according to sociodemographic characteristics, especially gender. Sports centers using the Fitbe app generally have a higher proportion of female users. Although the lack of male responses could also be another study limitation in obtaining a balanced gender representation. Regarding age, the lack of responses from older adults might stem from the digital gap that exists in this population's use of technology.

Considering these limitations, future research should address strategies to increase participation from both male and older adult populations (55 years and older). Lastly, it would be interesting to analyze how UX attributes impact models that examine influential factors in technology usage intention, such as TAM (Davis, 1989), UTAUT (Vankatesh et al., 2003) or UTAUT2 (Venkatesh et al., 2012).

Conclusions

The main conclusions of this study indicate that Fitbe provides a moderate UX to platform users. Pragmatic qualities scored higher, with transparency standing out over hedonic attributes, particularly stimulation. The results also highlight statistically significant differences considering sociodemographic variables such as gender and educational level, but not age. Cluster analysis identifies three groups, with users showing high intention to use the Fitbe app being a prominent segment.

These findings underscore the importance of consistently offering innovation and new experiences to app users. Oyibo and Vassileva (2021) suggest that app designers should prioritize utilitarian benefits (perceived utility) and hedonic benefits (perceived aesthetics) over usability and perceived credibility when designing fitness apps.

Fitbe developers should focus on innovating features and functions, introducing new elements that differentiate the brand in the market and enhance UX and hedonic qualities. By improving efficiency, they could better influence the behaviour of male users, enhancing the intention to use Fitbe. Additionally, developers could introduce novelties in user progress tracking, providing interactive and individualized tools. The more customization options the platform and app offer, the more persuasive features they will have to enhance user UX.

Lastly, emphasizing direct communication and constant feedback with users is crucial. Paying attention to user feedback allows for keeping the application updated and improved. Users actively participating in the development process, and their suggestions being taken into account, ensure that the application remains current and appealing.

Ethics Committee Statement

Not applicable because the study does not collect personal data.

Conflict of Interest Statement

There is no conflict of interest. The financing entities or institutions had no influence on the design of the study, the analysis of the data, or the interpretation of the results.

Funding

Authors' Contribution

Conceptualization J. A., S., & J.; Methodology S. & P.; Software P.; Validation P. & S.; Formal Analysis P. & S.; Investigation J. & J. A.; Resources J. & J. A.; Data Curation J. & J. A.; Writing – Original Draft M. & S.; Writing – Review & Editing M. & S.; Visualization M. & S.; Supervision J. & S.; Project Administration J.; Funding Acquisition J. & S. All authors have read and agree with the published version of the manuscript.

Data Availability Statement

Data available on request from the corresponding author, angosto@us.es.

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