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Behavioral Analysis of Soccer Players' Motivation Toward Smartwatch Use

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ABSTRACT

Wear application is one of the most widely used technologies by society. One of them that is widely used by the digital community today is the Smartwatch. Smartwatches are popular with the public because they provide various benefits, ranging from health, and body fitness, to fashion. The benefits of smartwatches do not stop at daily needs but can also be used in sports. In this study, this study aims to measure the motivation of soccer players in using smartwatches to record their performance on the field and daily. This quantitative study uses the conceptual model of TAM and UTAUT which is adapted to a case study of soccer players. The results of this study are Ease of Use, Enjoyment, Attitude Relative Advantage, and Social Influence are conditions that affect soccer players using smartwatches.

Keywords: Smartwatch, Football, UTAUT, TAM, use technology

Introduction

The smartwatch is one of the technologies that can be used with a smartphone, connected or not connected, and this has become one of the most dynamic Internet of Things (IoT) technologies and, in recent years, has a lot of enthusiasm from sports. body shape. Increased enthusiasm has prompted academics to examine the opportunities and challenges posed by these technologies, whose potential has been demonstrated in sectors such as health, sports and fitness, quality of life, education, and many others.

Many smartwatches are interesting because give various type benefits. Saveethya Sivakumar and Yong Jin Kun to do study for knowing High-Intensity Interval Training Exercises with using Convolution Neural Network (CNN) (Sivakumar et al., 2020). In study this smartwatch is used as a media for data retrieval later will managed for know complex full body exercises. Alfeo et al. (2017) To do the measurement of physical activity levels rather than specific physical activity with using a smartwatch. Xiao (2020) use smartwatch to monitoring beat heart.

The use of smartwatches is not only a fulfillment of fashion needs, health, education, or other things. In sports, soccer players in Indonesia are often found wearing smart watches in training sessions or in everyday use. Through these watches, the coaching team will provide them with new training menus and routines while at home. The increase in muscles until their break will be monitored by the coaching team. This phenomenon becomes interesting to be observed to be studied more deeply about the motives and attitudes of the players in the smartwatch.

This study will measure intention a athletes and players in football using smartwatch in take notes performance them. Target of study this that is player amateur football nor professionals who use smartwatches when play football. Data obtained from smartwatch then will processed use modification Among the TAM (The Technology Acceptance Model) method and the UTAUT (Unified Theory of Acceptance and Use of Technology) method.

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Material and Methods

The Technology Acceptance Model (TAM) was developed in the 1980s. TAM was created for knowing factor what just does it support and/ or influences the intention of somebody in using IT. Regular TAM is used by the organization for increasing the intention of members in using IT.

TAM consists of 5 components namely perceived usefulness (PU), perceived ease of use (PEOU), attitude toward (AT), behavioral intention (BI), and actual use (U). PU is trusted from user that with use IT assistance will make it easy they in activity while PEOU is thinking user about effort required for using IT. PU and PEOU have a connection with BI.

TAM method has already many used in research. Zarafshani et al. (2020) did study tied reception technology by an agriculture teacher in Iran. The study conclude that PU factor has a significant impact to BI in accept technology. In research conducted Kabir et al. (2022) they use TAM for evaluate IT use among workers in Bangladesh. They get results that factor usability (PU) has strong impact in level reception technology (BI) by workers in Bangladesh. Other research conducted by Irawan (2022) et al for analyze the intention use bicycle in the post-COVID-19 period. With blend their TPB and TAM methods analyze factor that only affects _ the intention use bicycles in the post-COVID-19 era. They get results i.e. PU and PEOU have strong impact to the intention (BI) of users in use bicycles.

The Unified Theory of Acceptance and Use of Technology (UTAUT) method is one of the acceptance models technologies recently developed by Venkatesh. UTAUT combines successful features applied from eight theory reception of different technology becomes one theory. Eight combined theories namely theory of reasoned action (TRA), technology acceptance model (TAM), motivational model (MM), theory of planned behavior (TPB), combined TAM and TPB, model of PC utilization (MPTU), innovation diffusion theory (IDT), and social cognitive theory (SCT).

After to do evaluation against the previous 8 models, Venkatesh et al. find 7 constructs that become determinant significant direct to behavioral intention or use behavior in or more in each model. Constructs the namely performance expectancy, social influence, facilitating conditions, attitude toward using technology, and self-efficacy. After conducted study more more, found four construct main war important as determinants direct from behavioral intention and use behavior, namely performance expectancy, effort expectancy, social influence, and facilitating conditions. There is There are also four other moderators, namely gender, age, voluntariness, and experience who play a role moderate impact from four construct mainly on behavioral intention and use behavior (Al Mamary, 2022).

The UTAUT method is often used in research related to technology acceptance. Fiby Nur Afiana et al conducted a study to understand the level of acceptance of operational systems in a company using the link method (Afiana et al., 2020). Based on this research, performance expectancy variables, effort expectancy variables, social influence variables and facilitating condition variables have a positive effect on behavior intentions. Research was also conducted by Komang Thica et al with the aim of knowing the effect of job expectations, business expectations, sociocultural factors, and facilitating conditions on the individual performance of users of Accounting Information Systems (AIS) using the UTAUT method (Ardana & Putra, 2018).

The results showed that the variables of performance expectations, socio-cultural factors and facilitating conditions had a positive effect on individual performance, while business expectations had no effect on individual performance. Nugraha and Yadnyana (2018) conducted a study to examine the interest in the utilization and use of the Regional Management Information System (SIMDA) with the UTAUT model. The results of the analysis found that there is an influence between the variables of performance expectations on interest in utilization, business expectations on interest in utilization, social factors on interest in utilization, conditions that facilitate use, training in use, interest in utilization in use.

Another study was conducted by Muhammad Arsy et al. (2019) to describe the level of application acceptance based on the variables Performance Expectancy, Effort Expectancy, Facilitating Conditions, Social Influence, Trust of Internet, Trust of Government, Trust of CSC, and

Behavioral Intention to Use E-Governement Services, and provide recommendations to increase acceptance and use of the Among Warga application at the Batu City Government using the UTAUT method. The results obtained are that someone's interest in adopting the Among Warga application has quite good results.

Results and Discussion

*Personal characteristics of the participants m*ost respondents are androgynous boy where Thing this considered normal because enough football identical as exercise for men. This study involved 128 soccer players and most of the respondents also came from the age of 17-25 years where this age is considered the prime age in football.

Validation and reliability Something indicator could declared valid when have highest loading factor value to target construct compared value of loading factor to construct another.

Table 1. Discriminant validity

	A	COM	EQU	EN	RA	SI
A	0.642					
COM	0.433	**0.597**				
EOU	0.559	0.486	**0.593**			
EN	0.517	0.496	0.468	**0.557**		
RA	0.418	0.481	0.410	0.351	**0.551**	
SI	0.597	0.352	0.454	0.495	0.276	**0.584**

The square root of AVE should be higher than its correlation with any other latent variable. This means that for any latent variable, the variance shared with its block of indicators is greater than the variance it shares with any other latent variable. In SmartPLS output, in the Fornell-Larcker criterion table, the square root of AVE appears in the diagonal cells, and correlations appear below it. Therefore, in absolute value terms, if the top number (which is the square root of AVE) in any factor column is higher than the numbers (correlations) below it, there is discriminant validity (Garson, 2016). Thus, the results from Table 1 Fornell–Larcker Discriminant Validity can be declared eligible to then proceed to the Building Reliability test stage.

Table 2. Convergent validity

	Composite Reliability	AVE
Attitude (A)	0.777	0.412
Compatibility (COM)	0.733	0.357
Ease of Use (EOU)	0.725	0.352
Enjoyment (EN)	0.690	0.310
Relative Advantage (RA)	0.747	0.304
Social Influence (SI)	0.752	0.341

Acceptable for compromise is equal to any measure of the limit, including Cronbach's alpha. Composite reliability varies from 0 to 1, with 1 leading to a perfect estimate. In a model adequate for exploratory purposes, the composite reliability should be equal to or greater than 0.6 (Garson, 2016). it can be seen in Table 2, that the conditions of Convergent Validity have been met for each variable, while the value in the AVE is not sufficient to explain 50% of the variance, however, this research continues to find a factoring relationship between latent variables.

Table 3 shows, Compatibility has a positive original sample value of 0.002 which means a direction from testing by hypotheses and values of 0.979 or > 0.05. This thing makes the theory rejected; then Compatibility does no take effect. Attitude. Ease of Use has a positive original sample value of 0.234 which means a direction from testing by hypotheses and values of 0.000 or <0.05. This thing makes the theory received then Ease of Use affects Attitude. Enjoyment has a positive

original sample value of 0.125, which means a direction from testing by hypotheses and values of P Values of 0.039 or <0.05.

Table 4. Result of hypotheses

	Original Sample	Sample Mean	Standard Deviation	P Values
Compatibility→ Attitude	0.002	0.010	0.073	0.979
Ease of Use→ Attitude	0.234	0.228	0.061	**0.000**
Enjoyment→ Attitude	0.125	0.127	0.061	**0.039**
Relative Advantage→ Attitude	0.130	0.147	0.055	**0.018**
Social Influence→ Attitude	0.339	0.341	0.056	**0.000**

This thing makes the theory received then Enjoyment matters to Attitude. Relative Advantage has a positive original sample value of 0.130, which means a direction from testing by hypotheses and values of P Values of 0.018 or <0.05. This thing makes the idea received, so the Relative Advantage affects Attitude. Finally, the result Demonstrability has a positive original sample value, which is 0.138, which means a direction from testing by hypotheses and values of P Values of 0.039 or <0.05. This thing makes the hypothesis received then the Result Demonstrability affects Attitude. Social Influence has a positive original sample value of 0.339, which means a direction from testing in accordance with hypotheses and values of 0.000 or <0.05. This thing makes the hypothesis received then Social Influence take an affect on Attitude.

From the results of processing the data obtained, we can discuss that Compatibility affects Attitude; this condition is not possible because soccer players do not feel that the complexity of the smartwatch does not involve use during practice, but other conditions can be important for measuring stress levels, notifications, fashion. Meanwhile, on the factors of convenience, pleasure, and benefits that are considered critical, social influences directly affect the Attitude of soccer players in using smartwatches; this is supported because of factors that influence each other in conditions such as the ease of using smartwatches with pleasure, using smartwatches. Finally, fun so it may be surprising but still accessible, and maybe smartwatches are expensive. Still, because of their more significant social influence, football players use a smartwatch for needs that they feel are beneficial in terms of health, fashion, or monitoring their physical performance.

Conclusion

This research contributes to the adoption of technology, where this study looks for what factors influence the intention of indoor soccer players to use smartwatches in playing soccer. Based on this study, the characteristics of Ease of Use, Enjoyment, Relative Advantage, and Social Influence affect the intention of indoor soccer players to use smart watches while playing. With this study, interested parties such as smartwatch manufacturers or researchers can use these findings as an initial study of the behavior of football players towards the use of smartwatches.

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