Consumer Choice of Fitness Trackers: An Example of Modeling

Oleksandr Dorokhov [1], Dmytro Yevstrat [1],
Yuliia Chyrva [1], Oleksii Yermolenko [1], Liudmyla Dorokhova [2]

[1] *Simon Kuznets Kharkiv National University of Economics, Kharkiv, Ukraine*
[2] *National University of Pharmacy, Kharkiv, Ukraine*

Abstract – The study of consumer choice is an important classical research task for various markets for goods and services. This fully applies to new products and devices for household, personal monitoring, and self-monitoring of health status. In the last decade, a few such products have appeared and have become available to a wide range of buyers, in particular, fitness trackers and smartwatches of various manufacturers, brands, and models. It has become quite difficult for the buyer and the user to compare and choose a specific one. Therefore, the purpose of the work was to study the market of fitness trackers and smartwatches, determine the main criteria for their comparison by the consumer, and apply multi-criteria approaches for their assessment and selection, both by buyers and by sellers themselves, their sales specialists. The research methods used were consumer surveys, market systems analysis, multi-criteria computer modeling. The proposed and described approach makes it possible to obtain computationally substantiated, objective numerical estimates for   special fitness monitoring device, selected for compare consideration. Thus, it is possible to provide information support for consumer choice, as well as to carry out a comparative analysis of the range of products offered by their sellers themselves.

1. Introduction

In the context of a competitive market economy and globalization of trade relations, the openness of markets for goods and services, almost all goods produced and offered in the world become available to the consumer.

This is especially felt in relation to new, innovative, technologically, and functionally advanced household goods for various purposes, developed based on new information technologies all kinds of electronic gadgets for individual household use.

A significant place among them is occupied by devices for control, monitoring, daily tracking of the state of the human body, physical activity, and the corresponding parameters of vital activity.

Such devices include smart scales, electronic thermometers, blood glucose meters, blood pressure monitors and others.

At the same time, devices for daily monitoring of physical activity and a healthy lifestyle have become increasingly popular and widespread.

These are a variety of fitness bracelets and trackers, smart watches, and related software (applications for smartphones, programs for computers, specialized websites, portals, and social networks). In the context of a huge supply of these products on the market and their various characteristics, a reasonable choice and comparison of them by a consumer, a potential buyer, becomes not an easy, but urgent task.

2. Literature Review

Without pretending to be a complete and in-depth review of literary sources, we will focus only on some publications on the use of fitness trackers.

Thus, in [1] author describe details and classifies the general properties, capabilities, and benefits of fitness trackers as part of the wearable device market and one of the fastest growing global technology trends.

The article [6] emphasizes that every year new fitness trackers and smartwatches enter the consumer market. Therefore, with the increase in the number of different brands of fitness trackers, there is a need for an overview of wearable wrist devices for fitness.

Paper [4] is devoted to the review of the most popular household monitors of physical activity in the world market. An article [2] provides an overview of fitness trackers, their features that should be considered before using the trackers - when it is advisable to use a fitness tracker; choice of brand and model; retrieving and using data.

The study [9] examined and confirmed the main factors that influence a person's intention to use a wearable fitness tracker, including interpersonal influence, personal innovation, health interests and the estimated price of the device. In publication [12] the relationship between perceived usefulness and intention to use fitness trackers was identified. Also, the consumer is important mobility (anywhere and at any time), as well as ease of use.

Publication [13] explored the reasons for young people buying wearable fitness trackers. Among others, the influence of gamification and social pressures of the diffusion of innovations, the importance of aesthetics and virtual reward was revealed.

The attitudes of young people towards the use and perception of students of portable fitness trackers, as well as their impact on confidence and motivation in increasing physical activity, was investigated in [3]. The main motivators were weight loss and sleep tracking.

[10] confirms that consumer wearable fitness trackers can be a valuable source of information on the effects of naturally occurring psychosocial stressors.

A thematically related article [7] examines the accuracy of fitness trackers and confirms that their best models come close to professional, reference medical devices.

Finally, authors in [8] analyzed the state of the market for smartwatches and fitness trackers in Ukraine, and the lack of scientific research and publications in this area is emphasized. The main Ukrainian trading platforms where fitness trackers are offered ("Eldorado", "Comfy", "Rozetka", "Foxtrot", "Citrus", "Allo"), have been hired. The analysis of the models and brands offered in Ukraine is presented.

At the same time, according to [11] social networks are a key element for building a brand strategy, organizing, and promoting fitness trackers among consumers.

3. Research Purposes and Methods

The aim of the study is to develop computationally grounded approaches and means for comparing (in terms of essential for the user) features of household fitness gadgets intended for daily control of physical activity and lifestyle.

Respectively, the following tasks were solved:

- to investigate the perception of fitness gadgets by youth consumers;
- to consider information technology and computerized household devices for self-monitoring of physical activity and body condition;
- to study the offer on the Ukrainian internet market of fitness trackers;
- to set criteria for comparisons of fitness trackers, to select models for comparison;
- to perform a computer-based multi-criteria comparison of fitness trackers;
- to analyze the results obtained from the point of view of both sellers and potential buyers, consumers of fitness trackers.

The object of the research was the process of comparison and determination by potential users of the most acceptable fitness devices (from offered on the market), considering their technical characteristics and consumer requirements.

The subject of the research was modeling of consumer decision making on the comparative assessment of fitness gadgets available for purchase.

The research methods were consumer survey, study, and analysis of the supply on the Ukrainian market of fitness devices, multi-criteria convolution for comparing close or similar alternatives.

4. Perception of Fitness Gadgets by Youth Consumers

In the context of the general rapid computerization of all components of human life and activities in the modern information society, it is relevant to study the attitude of young people to fitness gadgets.

In general, the youth audience, its value orientations and purchasing preferences, the influence of SMART technologies on the transformation of the purchasing decision-making process is a relevant area of research.

To understand the perception of gadgets, the readiness to use them, a survey of young people from Kharkiv was conducted.

After all, they are the most interested and capable of various aspects of using gadgets to control physical condition and health in general, and some results are shown in Table 1.

The research was conducted by the method of online consumer survey using online questionnaires.

The questionnaire was posted on Google Forms; links were distributed through Facebook among young people by age. A sampling technique known as snowball was used. Its essence is that the initial group of respondents was randomly selected, and then they proposed other persons who were ready to participate in the survey.

In this article, we do not present all the results of the survey (these results will be presented in a separate publication) concerning the perception of youth gadgets, digital medicine, and health monitoring, since we are focused specifically on the issue of consumer choice of fitness trackers.

However, in a generalized form, we can state the following. So, the emergence of a variety of sophisticated consumer electronic devices and gadgets, including a variety of fitness trackers, bracelets, watches, has become a significant trend in recent years in the global consumer market for consumer electronics.

Table 1. Some data of survey
Source: Obtained by the authors

Total surveyed		380 persons
female		67%
male		33%
Age (years)	18 - 23	88%
	23 - 30	9%
	30 - 35	3%
Education	secondary education (school)	14%
	secondary special education (college)	8%
	bachelor	55%
	master	21%
	Doctor of Philosophy	2%
Self-reported health status	excellent health	37%
	good health	53%
	poor health	1%
	could not assess	6%
Possession of fitness trackers and bracelets	have fitness bracelets	10%
	themselves bought fitness bracelets	9%
	don't want to have a fitness bracelet	24%
	can buy to increase physical activity	25%
	can buy because of fashion and interest	26%

The number of models of fitness trackers offered on the domestic market is extremely large. There is also a wide range of prices, significant differences in functionality, and technical characteristics.

Formally presented by manufacturers (and, accordingly, sellers) descriptions and specifications are difficult to verify in advance to ensure their objectivity, it is not possible to thoroughly compare different devices with similar parameters in practical use.

Prestige, prevalence, reputation, or, conversely, the uncertainty of the brand itself does not always accurately reflect the quality and operational advantages or disadvantages of a particular model of gadgets.

Obviously, without prior training or thorough study of the features of the use of certain features of fitness gadgets, for the average user, conscious and informed consumer choice is extremely difficult.

So, calculated methods of modeling consumer choice are necessary in the comparative consideration of several alternatives (models of fitness trackers) considering several criteria (technical and other characteristics).

5. Fitness Trackers on Ukrainian Market

In the context of the development of information technologies and the penetration of the Internet into everyday life in Ukraine, a significant part of the retail trade is moving to online stores, specialized online sites and platforms. Buyers of young age search, familiarize, book and purchase goods, products, and devices via the Internet (in classic online stores or through ordering on the Internet sites of physically existing retail chains). This is especially true of innovative, expensive, technically complex electronic goods and gadgets: smartphones, tablets, household medical electronics, devices for monitoring the state of the body and sports, various recorders, action cameras, and the like.

These devices often do not require initial direct contact with the customer. For him, the completeness and reliability of the description of the technical and operational characteristics are more important. This may be better provided via the Internet and web means than by a specific salesperson in a store.

Developed delivery services make the delivery of such goods to the buyer easy and convenient. The purchase of these products does not happen every day; therefore, it is advisable and cheaper to promote them via the Internet than to physically keep the entire range at a certain outlet. Therefore, fitness gadgets are mainly offered in Ukraine via the Internet.

Taking this into account, the offers of fitness trackers by online stores, websites of retail electronics networks, and aggregators of the market for complex electronic devices for household use were studied. Table 2 shows the corresponding data as of 24th of August in 2021. The most popular models according to the sellers' sites are shown in Table 3.

Table 2. Fitness trackers in the leading Ukrainian online sellers
Source: Data collected by the authors

Online seller, price range (Ukrainian Hrivna, 27 UHr is equal 1 US Dollar)	Number of models, total	Brands (number of models)
Citrus (379 - 5819) https://www.citrus.ua/fitnes-trekery-160/	32	Samsung(5), Polar(2), Fitbit(2), Huawei(3), Misfit(3), Withings(2), Xiaomi(3), Nokia(1), Amazfit(4), MOOV(1), Garmin(2), Honor(1), Canyon(1), iHealth(1), iFeelGood(1)
Rozetka (249 - 2499) https://rozetka.com.ua/fitnes-trekery/c4627554/seller=rozetka/	53	Acme (5), Atrix (22), Discovery (3), Huawei (2), MyKronoz (1), Samsung (2), Xiaomi (18)
Allo (57 - 12123) https://allo.ua/ua/fitnes-braslety/	299	Amazfit(8), Atrix(18), Finow(3), Fitbit(17),Folem(4), Garmin(13), Goral(1), Herzband(3), Hewolf(3), Honor(7), Huawei(8), Jakcom(3), Kelima(2), KingWear(2), Lemfo(38), MIO(4), Mavens(46), MyKronoz(1), Nomi(6), Polar(14), Samsung(7), Smartband(59), Sony(2), UWatch(17), Withings(4), Xiaomi(9), Zeblaze(3)
Comfy (209 - 2519) https://comfy.ua/ua/fitness-bracelets/	66	Atrix, Acme, Amazfit Basis, Beurer, Canyon, Garmin, Honor, Huawei, Iwown, Jawbone, MyKronoz, Nomi, Polar, Samsung, Smart, Sony, Uwatch, Xiaomi
Foxtrot (499 - 4999) https://www.foxtrot.com.ua/uk/shop/smart_brasleti.html	40	Acme(3), Amazfit(2), Beurer(4), Garmin(1), Honor(2), Huawei(6), MyKronoz(9), Nomi(1), Polar(1), Samsung (8), Xiaomi (3)
Eldorado (149 - 6692)	25	Atrix(1), Beurer(4), Honor(1), Huawei(4), MyKronoz(1), Nomi(1), Polar(2), Samsung(6), Xiaomi(5)

Table 3. Most popular models of fitness trackers on Ukrainian market
Source: According to [8] and author's own analysis

Seller (web addresses)	Models (first - the most popular)
Citrus https://www.citrus.ua	Xiaomi Mi Smart Band 4, iFeelGood ProSport HR, Canyon CNE-SB02BB, Samsung Galaxy Fit, Huawei Band 3, Polar A370 M/L, Garmin Vivosmart HR
Rozetka https://rozetka.com.ua	Xiaomi Mi Band 3, Huawei Band 3, Atrix ProFit, Samsung Galaxy Fit, MyKronoz ZeFit4, Acme ACT101, Discovery Mi2
Allo https://allo.ua	Xiaomi Mi Smart Band 4, Honor Band 4, Samsung Galaxy Fit, Huawei Band 3, Nomi SB-22, Garmin Vivosmart HR, Amazfit Cor 2
Comfy https://comfy.ua	Xiaomi Mi Smart Band 4, Huawei Band 3, Canyon CNE-SB02BB, Atrix ProFit, Nomi SB-22, Samsung Galaxy Fit, Beurer AS 80, MyKronoz ZeFit3
Foxtrot https://www.foxtrot.com.ua	Xiaomi Mi Band 3, Huawei AW61, Huawei Band 3, Honor Band 4, Samsung Galaxy Fit, Acme ACT101, MyKronoz ZeFit4, Amazfit Cor 2,
Eldorado https://eldorado.ua	Huawei AW61, Xiaomi Mi Smart Band 4, Samsung Galaxy Fit, Honor Band 4, MyKronoz ZeFit4, Nomi SB-21, Beurer AS 87

6. Selection of Basic Criteria and Models of Fitness Trackers to Compare

A complete list of parameters characterizing the technical and user capabilities of fitness trackers is given in Table 4.

Usually, they are indicated in the description of the model on the websites of sellers or manufacturers.

It is obvious that the average consumer is mostly unable to consider, compare, or analyze the ratio of all available and known characteristics, and is often guided only by a superficial understanding of the practical significance of the level of certain purely technical characteristics.

Often, it makes consumer choices on only two or three, (important from his subjective point of view and perception) characteristics.

Based on the analysis of the market offer of fitness trackers in the leading Ukrainian retail Internet networks, we will select (based on Table 3) for further comparative consideration the most popular models (according to the sellers' data), namely: Xiaomi Mi Smart Band 4, Honor Band 4, Samsung Galaxy Fit, Huawei Band 3, Nomi SB-22, Garmin Vivosmart HR, Amazfit Cor 2.

Table 4. Main technical parameters of fitness trackers
Source: According to [8] and author's own analysis

Parameter (characteristic)	Available options (possible alternatives)
Fitness trainer	Available, absent
Matrix (screen) type	Super AMOLED, AMOLED, LED, OLED, PMOLED, IPS, LCD, Transflective, TFT, Monochrome
Display material	Mineral glass, Plastic, Tempered glass
Touch screen	yes, no
Display parameters	Size, Resolution, Pixel Density
Memory parameters	Flash, Operational
Compatibility	Universal, iOS, Android, Windows Phone, Mac
Wireless technologies, connectors	Wi-Fi, Bluetooth (тип), NFC, ANT, GPS, Glonass
Calls and notifications	Message from apps, message about calls, message about SMS, Beep, Vibration, Built-in Microphone, Speaker (Speakerphone), SOS Function, Calendar Events, Social Networking, Email
Sensors	Light sensor, Tonometer, Accelerometer, Gyroscope, Barometer, Calorie Counter, Pedometer, Optical heart rate sensor, Heart rate monitor, Detachable from hand, Thermometer, Altimeter, Compass

Obviously, their design is close and almost identical (slightly different straps, color, material), and therefore the primary factors are the technical characteristics, functionality, and built-in capabilities.

Therefore, we have considered in more detail their consumer characteristics and technical parameters (according to https://allo.ua/ua/catalog/product_compare/index/).

As it is known from the theory of decision-making and solving practical tasks of multi-criteria choice (given for example in [5]), when comparing several products for further selection of only one of them, the average consumer (buyer) can adequately perceive and compare a maximum of 7-9 products (alternatives, options) considering 7-10 criteria (characteristics, parameters, qualities).

The list of the most important qualities of the product for an individual consumer is determined by its individual consumer preferences, requirements and needs. It also depends on the material and social status of the buyer, age, financial capabilities, type of activity, education, lifestyle, profession and so on.

So, it is advisable to identify and consider only the most important, informative, general parameters for comparing the fitness bracelets under consideration.

Such parameters can be the following (with different comparative importance for each individual user): price, brand, display characteristics, memory, sensors, alerts, functions, operating time, ease of use (weight, protection, additional features, etc.).

Some of these features are evaluated by numerical values (price, display, memory, operating time).

To assess the non-metric properties, an approach is used, when one point is added for each item of opportunity and thus the final assessment is obtained (sensors, alerts, functions, convenience).

The result is shown in Table 5, which summarizes the estimates for all selected devices for all selected characteristics. If certain information is not available for a particular model, the worst value among others available is used.

Table 5. Values of comparison parameters
Source: Data collected by the authors

Parameters	Xiaomi Band 4	Honor Band 4	Samsung Galaxy Fit	Huawei Band 3	Nomi SB-22	Garmin Vivosmart	Amazfit Cor 2
Price (UHr)	999	1399	899	1699	699	3300	1249
Display (inch)	0.95	0.95	0.74	0.95	0.96	0.74	1.23
Screen Points (thousands)	28800	28800	8200	28800	12800	10900	12800
Memory + flash = (points)	512кб+16мб=3	384кб+16мб=2	128кб=1	1мб+16мб=4	32мб+256мб=5	128кб=1	128кб=1
Notifications (number)	7	3	5	3	7	7	5
Sensors (number)	5	4	5	2	3	3	2
Functions (number)	6	3	4	5	3	6	3
Working time (days)	20	7	7	10	15	7	7
Weight (g)	22.1	23	15	20	21.2	32	32
Brand (points)	4	5	6	5	1	3	2

This table is used for computer modeling of multicriteria selection according to the standard convolution algorithm. A computer realization of the algorithm is not essential, because the task of the study is to develop an approach to solve the problem.

Various practical implementations of algorithms are only ancillary tools, and do not have a significant impact on the final, generalized result.

The task of multi-criteria selection on many alternatives has many computer implementations, but we have chosen and create own solution in Excel, so it is accessible, user-friendly, simple, and easy to use. It does not require special training from the user, and the input data and results can be easily transferred to other programs or documents.

7. Modeling of Comparative Choice of Fitness Trackers

For practical modeling of multi-criteria comparison of fitness gadgets, an approach is used, which consists (in the first stage) in a pairwise comparison of all selected features (selection criteria) to determine their relative weights.

In the second stage, integrated convolution is used. That is, one has to first determine the ratio of the importance of the criteria. To determine the relative importance, only two criteria are compared separately, and this is done for all possible pairs of criteria. One can use both direct customer surveys and expert assessments.

After all, often qualified experts provide more balanced and sounder understanding of the importance of device parameters, their impact on the overall technical level, potential and consumer value.

It should be emphasized that the result significantly depends on personal consumer preferences, requirements, preferences, expectations of each individual buyer of a fitness gadget (as well as for any other product).

Note that at first, specific fitness devices are not even considered directly, but only the importance of the choice parameters (as such) for the decision maker is determined.

For our case, the ratio of the importance of the selected parameters is presented in Table 6.

For further calculations, the computer program (Excel macros, created by authors), has been used; and the numerical results are shown in Figure 1.

Table 6. Pairwise binary comparison of the relative importance of the parameters
Source: Ellaborated by the authors

Parameters	Display	Screen Points	Memory	Notifications	Sensors	Functions	Working time	Weight	Brand
Price	equal	more	more	more	less	less	equal	more	less
Display	-	more	more	more	less	less	more	more	less
Screen Points	-	-	less	less	less	less	less	less	less
Memory	-	-	-	less	less	less	less	less	less
Notifications	-	-	-	-	less	less	equal	equal	less
Sensors	-	-	-	-	-	equal	more	more	equal
Functions	-	-	-	-	-	-	more	more	equal
Work time	-	-	-	-	-	-	-	less	less
Weight	-	-	-	-	-	-	-	-	less

According to these results, the best fitness tracker is XiaomiBand4 (0.69), the second and third with similar indicators are HuaweiBand3 (0.42) and NomiSB22 (0.39). HonorBand4 (0.34) and SamsungGalaxyFit (0.33) have average ratings (also close). The weakest, almost uncompetitive, were GarminVivosmart (0.26) and AmazfitCor (0.25).

Of course, this result is valid precisely because of the importance of the criteria. When changing their ratio, the result can change significantly, even dramatically.

As noted above, this depends on the importance of the individual parameters of the device for each specific consumer (user), goals and situations of use of the device. Sometimes other parameters become important (for example, protection against moisture, shocks, strength of the screen glass, temperature limits of application, etc.).

PARAMETER	Price	Display size	Screen Points	Memory	Notifications	Sensors	Functions	Work time	Weight	Brand
MATRIX OF DATA VALUES FOR FITNESS TRACKER PARAMETERS (FOR DEVICES SELECTED FOR EXAMINATION)										
desired value (goal)	min	max	max	max	max	max	max	max	min	max
MODEL										
Xiaomi Band 4	999	0,95	28800	3	7	5	6	20	22,1	4
Honor Band 4	1399	0,95	28800	2	3	4	3	7	23	5
Samsung Galaxy Fit	899	0,74	8200	1	5	5	4	7	15	6
Huawei Band 3	1699	0,95	28800	4	3	2	5	10	20	5
Nomi SB-22	699	0,96	12800	5	7	3	3	15	21,2	1
Garmin Vivosmart	3300	0,74	10900	5	7	3	6	7	32	3
Amazfit Cor 2	1249	1,23	12800	5	5	2	3	7	32	2

The results of determining the relative weights of the evaluation criteria (normalization to 1)

PARAMETER	Price	Display size	Screen Points	Memory	Notifications	Sensors	Functions	Work time	Weight	Brand
desired value (goal)	min	max	max	max	max	max	max	max	min	max
Weights of criteria	0,1010101	0,10202	0,0909	0,0929	0,0969697	0,10707	0,10707	0,097	0,098	0,107

The results of multi-criteria comparative evaluation of fitness trackers (points)

MODEL	Integral assessment
Xiaomi Band 4	0,69650263
Huawei Band 3	0,41679687
Nomi SB-22	0,38769041
Honor Band 4	0,34289333
Samsung Galaxy Fit	0,32527419
Garmin Vivosmart	0,25652673
Amazfit Cor 2	0,25085575

Figure 1. Calculation of integrated assessments for selected fitness gadgets.
Source: Calculated by the authors

8. Discussion and the Possibilities of Using the Proposed Approach

Considering the problem statement, process, and results of modeling, it is necessary to pay attention to several points. As already noted, the extremely large number of fitness gadgets on the market with very close, and sometimes even identical parameters and characteristics makes consumer choice very difficult.

Even their preliminary selection, superficial examination requires certain means to facilitate decision-making.

Simplified standard, classical methods of multicriteria selection on a set of alternatives can act as such. But it is necessary to give the consumer the opportunity to use them easily, simply. The proposed approach may well perform such a task.

Its advantage is the ability to consider detailed, individual consideration of personal requirements, preferences, and desires of the consumer (buyer, user). This is achieved by changing the composition of the comparison criteria, as well as their relative weights in a particular situation.

At the same time, the multi-criteria selection implemented in this model can be a useful marketing tool for sellers, small distributors, large wholesale suppliers, and even manufacturers of such products in solving their own various commercial problems.

For example, it can be optimization of the offer by model range, brands, price categories, functionality of fitness devices, etc. Such a preliminary assessment and a certain ranking make it possible to better determine the place of each specific device in a market oversaturated with supply.

The proposed method does not require special mathematical or computer training. It is easy to use and understand due to a simple calculation methodology and the use of standard software (Excel of any version).

Considering the possibilities of further development of this approach, we note that it is advisable to create a specialized application or user interface-add-on, so that the user does not have to manually call Excel macros.

It is also advisable to work out options with different absolute importance of criteria, as well as cases of complex interdependence of consumer assessments of criteria, the values of some of them for certain alternatives (fitness devices) beyond the lower or upper limits, acceptable (or acceptable) from the consumer's point of view. Another way to improve the proposed approach is to use more sophisticated decision-making tools, such as fuzzy sets, neural networks, genetic algorithms, analytical hierarchy methods, decision trees, and so on.

In any case (at different levels of computer implementation and complexity), this task remains relevant, timely and necessary both in the practical marketing activities of sellers and in the implementation of consumer choice by buyers

directly when purchasing fitness trackers (other similar electronic household gadgets), or a preliminary study of their range (in retail market, places of physical sale, online stores, and websites).

9. Conclusion

It is confirmed that it is difficult for the consumer to consider, compare, analyze the ratio of all operational and consumer capabilities of several fitness gadgets with similar characteristics. Often the buyer is guided only by a superficial understanding of the practical significance of the level of technical parameters. He makes consumer choices only on two-three (important from subjective point of view) features in decision-making.

We determined (for further comparative consideration and evaluation) the most popular models of fitness trackers offered by Ukrainian online sellers.

The main components and parameters for the comparison of fitness trackers and their numerical values have been established and presented.

Computer modeling of multicriteria assessment of fitness trackers by consumers using the convolution algorithm was carried out and the results were analyzed. Variants and features of practical use of the offered approach, and directions of its further development are presented.

The proposed approach allows to objectively analyze the perception of consumers, in particular, young people, modern electronic gadgets and related software; understand the main components and criteria for comparative evaluation and subsequent selection of fitness trackers by buyers; identify the best models of fitness gadgets on the domestic market; establish the most important characteristics of fitness trackers for customers to further focus on them by sellers of marketing and advertising efforts.

The most important criteria and features for comparison of fitness trackers are singled out, the sequence of the decision and computer realization of multicriteria choice is developed, practical calculations for group of popular fitness gadgets are executed, their generalized integrated estimations for the further comparison both consumers, and sellers are obtained.

References

[1]. Alderson, A. (2015). Sports tech: fitness trackers. *Engineering & Technology*, 10(4), 84-5.

[2]. Cadmus-Bertram, L. (2017). Using fitness trackers in clinical research: what nurse practitioners need to know. *The journal for nurse practitioners*, 13(1), 34-40.

[3]. Kinney, D. A., Nabors, L. A., Merianos, A. L., & Vidourek, R. A. (2019). College students' use and perceptions of wearable fitness trackers. *American Journal of Health Education*, 50(5), 298-307.

[4]. Desilets, P. A., & Mahar, M. T. (2016). Evaluation of the basis band fitness tracker. *International Journal of Exercise Science*, 9(3), 2.

[5]. Liudmyla, D., Oleksandr, D., Andrii, H., & Olena, S. (2020). Consumer Behavior Modeling for Fitness Services Evaluation. *Studies in Business and Economics*, 15(2), 69-84.

[6]. Henriksen, A., Haugen, M., Woldaregay, A., Muzny, M., Hartvigsen, G. (2018). Using Fitness Trackers and Smartwatches to Measure Physical Activity in Research: Analysis of Consumer Wrist-Worn Wearables. Journal of Medical Internet Research. 20(3), 110-121.

[7]. Jung, H. C., Kang, M., Lee, N. H., Jeon, S., & Lee, S. (2020). Impact of Placement of Fitbit HR under Laboratory and Free-Living Conditions. *Sustainability*, 12(16), 1-13.

[8]. Ishchenko, I., Savenko, A., Chupryna, N., & Kovalova, M. (2019). Analysis of smart hours and fitness trackers in the market of Ukraine. *Ekonomichnyy visnyk DVNZ Ukrayins'kyy derzhavnyy khimiko-tekhnolohichnyy universytet, (1), 136-141.*

[9]. Lee, S. Y., & Lee, K. (2018). Factors that influence an individual's intention to adopt a wearable healthcare device: The case of a wearable fitness tracker. *Technological Forecasting and Social Change*, 129, 154-163.

[10]. Pakhomov, S. V., Thuras, P. D., Finzel, R., Eppel, J., & Kotlyar, M. (2020). Using consumer-wearable technology for remote assessment of physiological response to stress in the naturalistic environment. *Plos one*, 15(3), e0229942.

[11]. Pinto, M. B., & Yagnik, A. (2017). Fit for life: A content analysis of fitness tracker brands use of Facebook in social media marketing. *Journal of Brand Management*, 24(1), 49-67.

[12]. Vongurai, R. (2020). Factors Influencing Intention to Use Fitness Trackers: A Case Study on Thais' Living in Bangkok. *International Journal of Economics & Business Administration (IJEBA)*, 8(2), 457-477.

[13]. Vooris, R., Blaszka, M., & Purrington, S. (2019). Understanding the wearable fitness tracker revolution. *International Journal of the Sociology of Leisure*, 2(4), 421-437.