HUMANITAS Pedagogika i Psychologia, pp. 27-40
ISSN 2956-3992

Original article

Received: 10.12.2023
Accepted: 15.12.2023
Published: 31.12.2023

DOI: 10.5604/01.3001.0054.4278

Author's Contributions:
(A) Study Design
(B) Data Collection
(C) Statistical Analysis
(D) Data Interpretation
(E) Manuscript Preparation
(F) Literature Search

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USE OF ARTIFICIAL INTELLIGENCE IN HIGHER EDUCATION: STUDYING THE NEEDS OF UKRAINIAN STUDENTS

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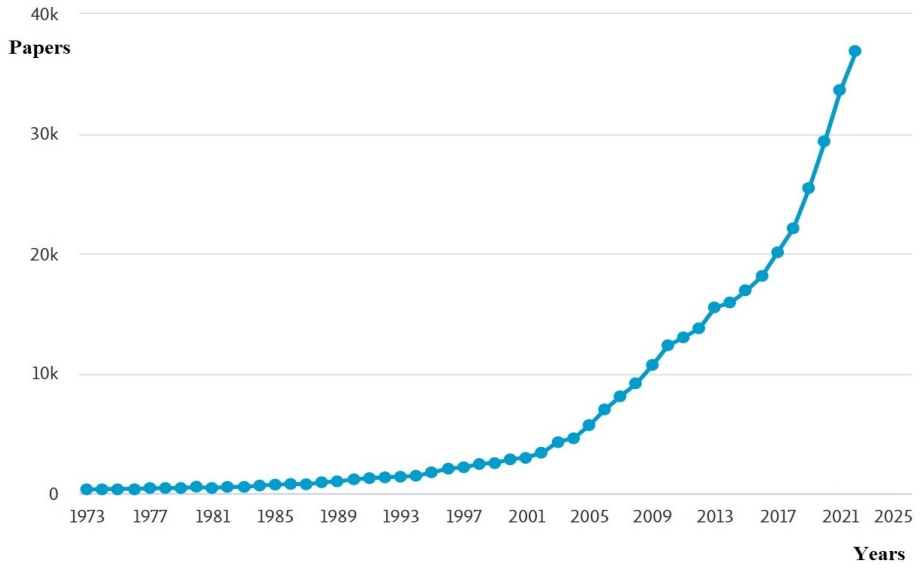
INTRODUCTION

The number of students enrolled at universities around the world is constantly growing. This growing number leads to the intensification of "growth diseases" as well as new challenges and problems. Those problems and challenges in higher education constantly attract the attention of scholars.

The authors' initial idea is based on the theory of educational service management: matching educational services to customers' needs leads to the growth in the quality of educational services. The authors assume that all students need to use Artificial Intelligence (AI) in higher education. Confirmation or refutation of this assumption is important for the management of educational services in higher education.

The results of the bibliometric analysis show an accelerating growth in the number of publications on higher education issues in the Scopus database (Figure 1). The bibliometric analysis was performed as a search within the Scopus last-50-year database according to the article title, abstract content and keywords. The total number of publications found was about 359 thousand scientific articles, reviews, books and their sections, short communications, conference abstracts, etc. (Figure 1). For example, more than 36 thousand publications on this topic were published and it was only a fraction of all publications of 2022 (Figure 1).

Figure 1. Number of publications on the topic: "higher education" in the Scopus last-50-year database



Source: authors' own research (https://www.scopus.com/term/analyzer.uri?sort=plf-f&src=s&sid=557aa3f-128dd5d78d00ec5b507f97ebb&sot=a&sdt=a&sl=31&s=TITLE-ABS-KEY%28higher+education%29&origin=resultslist&count=10&analyzeResults=Analyze+results, 26.11.2013).

Figure 1 shows the global growth in the number of publications on higher education issues. The intensity of publications on higher education can be divided into 3 periods. The first period started in 1973 and ended in 2002. This period is characterized by low intensity of article publishing. The second period started in 2003 and ended in 2017. It is characterized by the medium intensity of article publications. The third period started in 2018. It is characterized by high intensity of article publication. For example, during this period, the growth in the number of publications on higher education issues was about 10% on average.

Apart from the high-quality publications indexed in the Scopus database, there are also high-quality publications indexed in the Web of Science database. Some of them are devoted to the study of the educational needs of students as consumers of educational services. The opinion of students as customers corresponds to the concept of higher education services.

In the article (Uncles, 2018), the author states that higher education is the service industry among other businesses. In this case, students are perceived as consumers of educational services: "Where students are treated as partners, the new sources of value emerge on the basis of the value in development, value in delivery and value in consumption." (Uncles, 2018). Researchers (Alegre, Collet & González, 2011) considered how the definition of "educational needs" can be applied to schools. Researchers from South Africa (Sehoole, 2004) and Malaysia (Morshidi, Ahmad Abdul Razak & Yew Lie Koo, 2011) analyzed the emergence of globalization tendencies in the trade of educational services in higher education.

It is appropriate to highlight that the dynamic growth of the service sector was observed in Poland in the period of 2001-2015 (Styś, 2001; Muhlemann, Oakland, & Lockyer, 2001; Mongiało, 2007; Pająk, Kozieradzka, & Klimkiewicz, 2014; Bednarska-Olejniczak, 2014). A multifaceted study of educational services in higher education was conducted by various Polish scholars during the same period.

In the article (Wali & Andy-Wali, 2018), the authors draw attention to the importance of higher education services marketing in public universities in Nigeria. The authors want to focus the reader on the collaboration between students and staff. Drucker explicitly stated (2012): "What the customer considers valuable is so complex, so only customers themselves can answer the question. Management must permanently and systematically seek answers from the customer."

Martinez et al (2021) investigated the basic needs of higher education for the University of California students. The purpose of the study was to examine how students identify basic educational needs. A similar study was conducted at 21 colleges in Florida (Nix et al., 2021). It was already an advancement in studying the needs of students as consumers of educational services.

In the work of Polish and Ukrainian scientists (Okulich-Kazarin, Bokhonova & Ruda, 2022), the authors proved that the decisions of Ukrainian governmental

bodies did not meet the needs of students participating in distance learning during the COVID-19 pandemic. On the other hand, the article (Vauterin, Linnanen & Marttila. (2011) argues that by adopting a customer-centered mindset, universities can better and more effectively provide their higher education services. The Polish scholar Szopiński (2023) also studied student attitudes toward online learning after the COVID-19 pandemic. Although, the studies on the risk of the Internet addiction (Dudziak & Sitarczyk, 2023) have been trendy, the authors of this paper did not pursue the topic of online learning.

The authors of this paper considered a more up-to-date topic. This topic is the students' need to use Artificial Intelligence in the higher education process.

OpenAI released the ChatGPT (Generative Pre-trained Transformer) chatbot on November 30, 2022 (Geerling et al., 2023). This chatbot quickly attracted the attention of educational consumers. Institutions of higher education quickly responded to this fact. Some of them introduced AI tools into the educational process (Bissessar, 2023; Dogru et al., 2023; Harisanty et al., 2023; Hockly, 2023). Others started to prepare students to work in new contexts, which meant professional application of AI tools and working in an AI environment (Abdelwahab, Rauf, & Chen, 2023; AlZaabi, AlMaskari, & AalAbdulsalam, 2023).

Many studies show that most higher education institutions from Central and Eastern Europe remain invisible in the international and European academic world (Okulich-Kazarin et al., 2020; Boyadjieva, 2017). That is why, the authors of this paper chose to study the need of Ukrainian students to use AI in higher education. Besides, by contrast with Polish legislation, Ukrainian legislation has a definition of "educational service" (Law, 2017; Act of, 2018).

The literature review shows a rapid growth in the application of AI tools in order to improve the educational environment. At the same time, the authors conclude that there is insufficient research on the issue of students' needs for the use of AI in higher education. In particular, such needs of Ukrainian students require further research.

AIM

The aim of the research is to obtain new quantitative and qualitative data on the educational needs of Ukrainian students. These needs relate to the use of Artificial Intelligence in higher education. Such data is necessary for higher education management in order to improve the quality of educational services. As it concerns the needs for the application of AI in higher education, this data is crucial for the development of science and practice of educational services management at the national (Ukrainian, Polish) and international levels.

METHODS

The empirical part of the study was carried out in the Khortytsia National Educational and Rehabilitation Academy in the period of April-July 2023. The criterion chosen for inviting students to participate in the survey was their training specialization. The authors interviewed only those students who were not professionally involved in the study of Artificial Intelligence. 901 students participated in the study.

The authors applied a questionnaire of their own design. The questionnaire contained 4 metric questions and 12 essential questions. In the introductory part of the questionnaire it was emphasized that the participation in the questionnaire was anonymous and voluntary.

This article analyses the answers to question 8: How often do you need to use Artificial Intelligence in the learning process?

The question contained 5 answer options on a standardized scale:

[ ] every day,
[ ] 3-4 times per week,
[ ] 1-2 times per week,
[ ] 1-2 times per month,
[ ] Never.

The questionnaire existed in the cloud of Wyższa Szkoła Biznesu in Nowy Sącz.

RESPONDENTS

The groups of respondents were formed in accordance with the generally accepted methodology of empirical research (Selvamuthu, & Das, 2018).

General characteristics of the respondents are summarized in Table 1. Here, the respondents' gender is labeled: M – men, F – women, O – other.

Table 1. General respondents' characteristics

№	Faculty	Gender (M/F/O)	Number of participants
1	Students of the Professional College	21/310/4	335
2	Students of the Faculty of Rehabilitation Pedagogy and Social Work	48/289/2	339
3	Students of the Faculty of Art and Design	40/168/0	208
4	Students of the Faculty of Advanced Training	3/16/0	19
	Totally	112/783/6	901

Source: authors' own research.

Table 1 shows that 901 respondents participated in the survey. 112 men got involved; that was 12.43% of all the participants. Thus, the condition of diversity was achieved. The minimum number of participants represented teachers' advanced training unit (19 respondents). In fact, 3 groups of students and a group of teachers were interviewed. Teachers took their advanced training in the Khortytsia National Educational and Rehabilitation Academy.

The study on the distribution of students' opinions according to the age and gender is planned to be published in separate articles. Therefore, this article presents only the most general results of the study. The aim of the publication is to establish the overall image related to the needs of students on the research topic.

STATISTICS

Excel 2016 was used to analyze the data. The primary processing and graphical representation of the data was done using AI tools linked to the cloud of Wyższa Szkoła Biznesu in Nowy Sącz.

Verification of statistical hypotheses was performed according to the standard methodology described in the source (Selvamuthu, & Das, 2018). The authors developed the hypothesis testing the numerical values of the parameters of the studied general population. The null hypothesis H_0 and alternative hypothesis H_1, which contradicted the former, were accepted.

The null hypothesis H_0: all students needed to use of AI in higher education.

The alternative hypothesis H_1: not all students needed to use of AI in higher education.

Hypothesis testing allowed us to make probabilistic statements about the parameters of the general population.

RESULTS OF THE INITIAL PROCESSING OF THE SURVEY DATA

The results of the respondents' survey are summarized in Table 2. Here: A – every day, B – 3-4 times per week, C – 1-2 times per week, D – 1-2 times per month, E – Never.

Table 2. Overall results of the respondents' survey (number of selected answers)

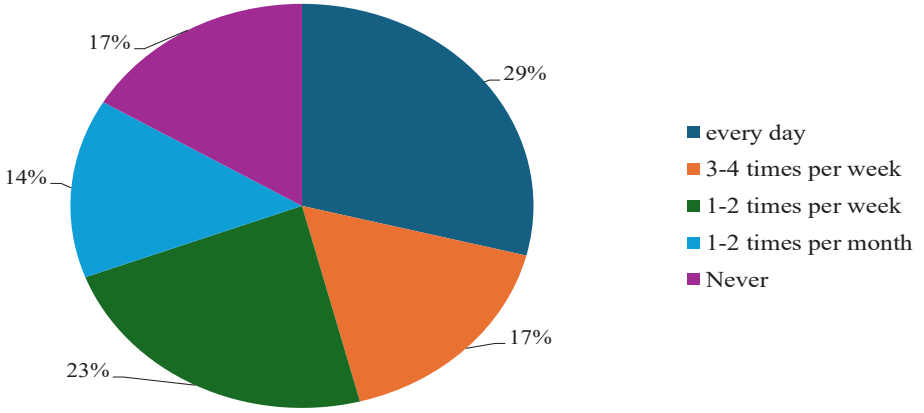
No	Faculty	A	B	C	D	E
1	Students of the Professional College (335)	97	57	78	48	55
2	Students of the Faculty of Rehabilitation Pedagogy and Social Work (339)	23	25	56	113	122
3	Students of the Faculty of Art and Design (208)	24	21	44	70	49
4	Students of the Faculty of Advanced Training (19)	4	4	6	4	1
	Totally (901)	148	107	184	235	227

Source: authors' own research.

Table 2 shows that column "E" is not blank. This means that in the surveyed groups of respondents there are students who did not need to use AI in higher education.

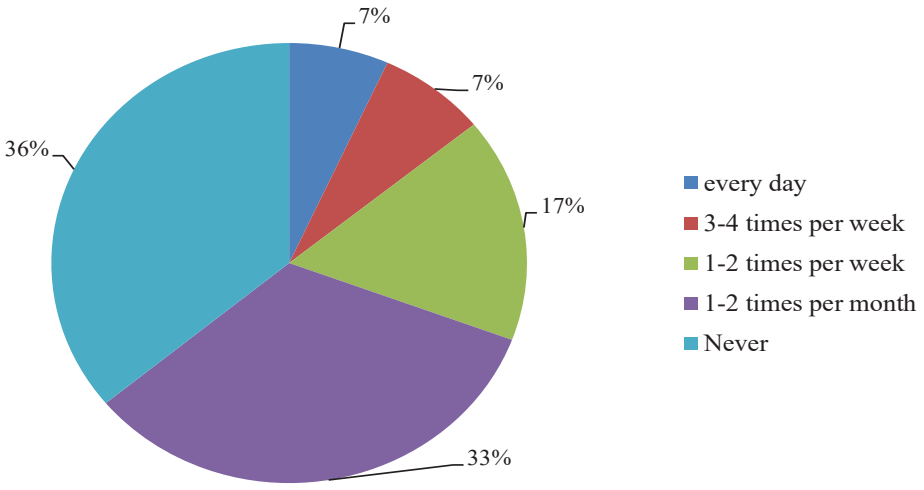
Figure 2 to Figure 5 below show the distribution of responses for each group.

Figure 2. Number of respondents' answers (Professional College)



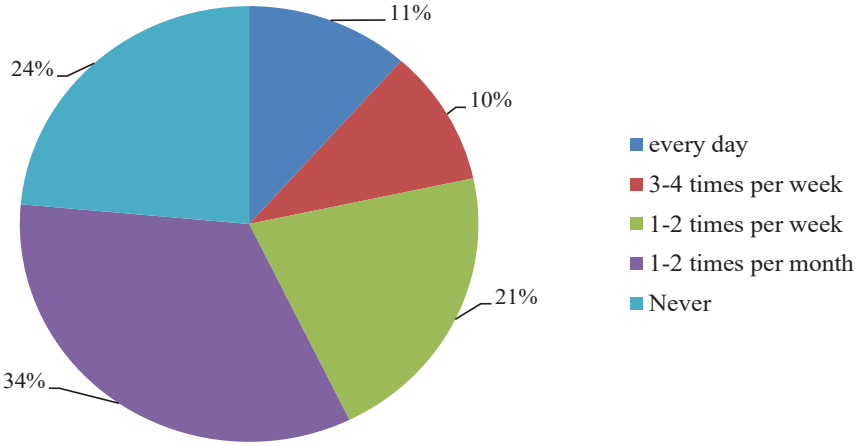
Source: authors' own research.

Figure 3. Number of respondents' answers (Faculty of Rehabilitation Pedagogy and Social Work)



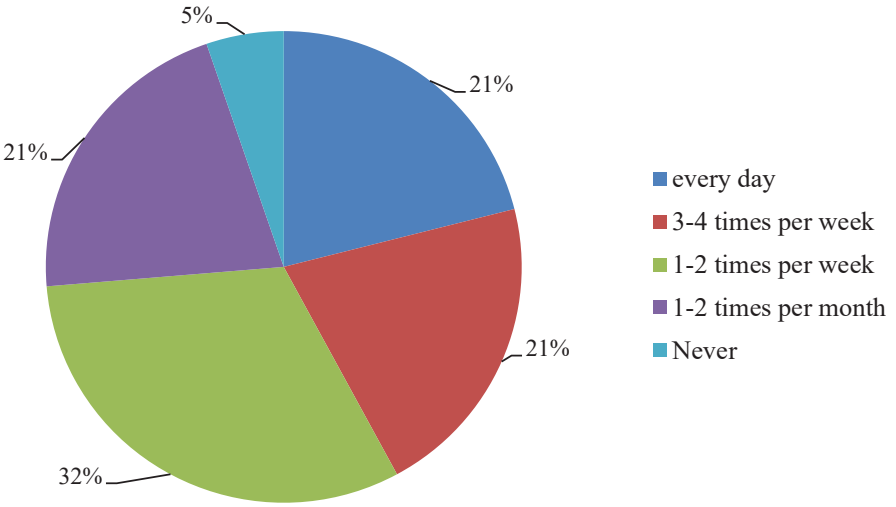
Source: authors' own research.

Figure 4. Number of respondents' answers (Faculty of Art and Design)



Source: authors' own research.

Figure 5. Number of respondents' answers (Faculty of Advanced Training)



Source: authors' own research.

Figures 2-5 show that the value of the response "Never" varies from 5% to 36%. These were the students who did not need to use AI in higher education. In other cases (64% to 95%) students needed to use AI in higher education. It can be noticed that in the group of advanced training students there is a smaller number of respondents without a need to use AI in higher education. This can possibly be explained by the fact that it is a group of teachers. They need the ability to use AI to conduct their lessons. Thus, the authors obtained qualitative data on students' needs to use AI in higher education.

Considerable variation in the size of the respondent groups as well as significant variation in the responses do not allow making a final judgment. It is possible that the variation in responses can be explained by random variation. Verification of statistical hypotheses will provide a scientific answer.

RESULTS: VERIFICATION OF STATISTICAL HYPOTHESES

In order to verify the statistical hypotheses, it is necessary to digitize the results of the survey. The authors assigned an index of «0.00» for responses E (Never). For the rest of the responses (A, B, C, D), the authors assigned an index of «100.00». This helped calculate the statistical indicators. Table 3 shows them. Here, the numbers 1-4 denote the respondent groups according to Table 1.

Table 3. General statistical indicators for all groups of respondents

No	Indicator	Number of respondent group			
		1	2	3	4
1	number of respondents, N	335	339	208	19
2	expected value, $M_{(x)}$	83.59	64.01	76.45	94.74
3	standard deviation for the group, δ_x	37.04	47.99	42.44	22.33
4	standard deviation for the general population, δ_{x-1}	37.10	48.07	42.54	22.94

Source: authors' own research.

Table 3 shows that the expected value $M_{(x)}$ ranges widely from 64.01% to 94.74%. Standard deviation for the group δ_x also varies widely from 22.33% to 47.99%.

The data in Table 3 is needed to verify the statistical hypotheses:

- The null hypothesis H_0: $\mu_0 = 100.00$ %. This means that all students need to use the AI in higher education (if random variations are not taken into account).

- The alternative hypothesis H_1: $\mu_0 < 100.00$ %. This means that not all students need to use of AI in higher education (if random variations are not taken into account).

The authors used the one-way test because the number of students in a group cannot be greater than 100.00%. The authors also accepted a high significance level $\alpha = 0.01$.

Table 4 shows the results of statistical hypotheses verification.

Table 4. Results of statistical hypotheses verification for all groups of respondents

No	Indicator	Number of a group			
		1	2	3	4
1	number of respondents, N	335	339	208	19
2	expected value, $M_{(x)}$	83.59	64.01	76.45	94.74
3	standard deviation for the group, δ_x	37.04	47.99	42.44	22.33
4	average error, $S_x = \delta_x / \sqrt{N}$	2.024	2.606	2.943	5.123
5	Value $\lvert t_{stat} \rvert = (M_{(x)} - \mu_0) / S_x$ for $\mu_0 = 100.00$ %	8.109	13.808	8.003	1.026
6	Value t_{tabl} for high significance level α (0.01)	2.326	2.326	2.326	2.552
7	$\lvert t_{stat} \rvert > t_{tabl}$	Yes	Yes	Yes	No

Source: authors' own research.

Table 4 divides the results of statistical hypotheses verification into 2 parts according to Table 1. The first part refers to the groups of students. These are groups 1-3. The second part refers to the group of teachers. This is group 4.

Table 4 shows that for the groups of students (groups 1-3), the value $\lvert t_{stat} \rvert$ is higher than t_{tabl}. The null hypothesis must be rejected. Therefore, the authors accepted the alternative hypothesis: not all students need to use AI in higher education (if random variations are not taken into account). This decision is taken with a high level of significance 0.01.

For the group of teachers (group 4), the value $\lvert t_{stat} \rvert$ is lower than t_{tabl}. We have no reason to reject the null hypothesis. Therefore, the authors accept the null hypothesis: all students need to use AI in higher education (if random variations are not taken into account). In this case, teachers are also implied as students. This decision is also taken with a high level of significance 0.01.

Thus, the authors obtained quantitative data on students' needs for the implementation of AI in higher education.

CONCLUSION

The authors obtained new quantitative and qualitative data on the educational needs of Ukrainian students in relation to the use AI in higher education. This data is obtained for the first time and therefore it is of interest for the development of science and practice of educational services management. The new data may be useful both in Ukraine and internationally.

1. The first research result is that the alternative hypothesis about students' needs to use Artificial Intelligence in higher education is accepted. The study revealed that not all students need to use AI in higher education. The proportion of students who have such a need varies from 64.01% to 83.59%.

2. The second research result is that the null hypothesis of teachers' needs to use Artificial Intelligence in higher education is accepted. The study reveals that all teachers need to use AI in higher education.

3. Both scientific results are obtained with a high level of significance 0.01.

4. These scientific facts should be taken into account in the management of educational services when making managerial and pedagogical decisions.

5. The limitation is the small size of the group of teachers (19 respondents). A detailed study of teachers' needs requires a larger number of respondents and is the purpose for further research.

REFERENCES

Abdelwahab, H.R., Rauf, A., & Chen, D. (2023). Business students' perceptions of Dutch higher educational institutions in preparing them for artificial intelligence work environments. *Industry and Higher Education*, 37(1), 22-34. https://doi.org/10.1177/09504222221087614.

Alegre, M.À., Collet, J., & González, S. (2011). How Policies of Priority Education Shape Educational Needs: New Fabrications and Contradictions. *Educational Policy*, 25(2), pp. 299-337. https://doi.org/10.1177/0895904809351688.

AlZaabi, A., AlMaskari, S., AalAbdulsalam, A. (2023). Are physicians and medical students ready for artificial intelligence applications in healthcare? *Digital health*, 9. doi:10.1177/20552076231152167.

Bednarska-Olejniczak, D. (2014). *Marketing wewnętrzny w przedsiębiorstwie usługowym*. Research Papers of Wrocław University of Economics (Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu), 353, pp. 69-78.

Bissessar, C. (2023). To use or not to use ChatGPT and assistive artificial intelligence tools in higher education institutions? The modern-day conundrum – students' and faculty's perspectives. *Equity in Education & Society*, 0(0). https://doi.org/10.1177/27526461231215083.

Boyadjieva, P. (2017). Invisible higher education: Higher education institutions from Central and Eastern Europe in global rankings. *European Educational Research Journal*, 16(5), 529-546. https://doi.org/10.1177/1474904116681016.

Dogru, T., Line, N., Hanks, L., Acikgoz, F., Abbott, J., Bakir, S., Berbekova, A., Bilgihan, A., Iskender, A., Kizildag, M., Lee, M., Lee, W., McGinley, S., Mody, M., Onder, I., Ozdemir, O., & Suess, C. (2023). The implications of generative artificial intelligence in academic research and higher education in tourism and hospitality. *Tourism Economics*, 0(0). https://doi.org/10.1177/13548166231204065.

Drucker P. (2012). *Praktyka zarządzania*. MT Biznes Sp. z o.o.

Dudziak, A., & Sitarczyk, M. (2023). Temperament and Internet addiction risk in high school students and university students. *HUMANITAS Pedagogika i Psychologia*, 1(27), pp. 175-191. GICID: 01.3001.0053.7612

Geerling, W., Mateer, G. D., Wooten, J., & Damodaran, N. (2023). ChatGPT has Aced the Test of Understanding in College Economics: Now What? *The American Economist*, 68(2), 233-245. https://doi.org/10.1177/05694345231169654.

Harisanty, D., Anna, N.E.V., Putri, T.E., Firdaus, A.A., & Noor Azizi, N.A. (2023). Is adopting artificial intelligence in libraries urgency or a buzzword? A systematic literature review. *Journal of Information Science*, 0(0). https://doi.org/10.1177/01655515221141034.

Hockly, N. (2023). Artificial Intelligence in English Language Teaching: The Good, the Bad and the Ugly. RELC Journal, 54(2), 445-451, https://doi.org/10.1177/00336882231168504.

Law (2017). Law of Ukraine No. 2145-VIII "On Education", 2017.

Martinez S.M., Esaryk E.E., Moffat L., & Ritchie L. (2021). Redefining Basic Needs for Higher Education: It's More Than Minimal Food and Housing According to California University Students. *American Journal of Health Promotion*, 35(6), pp. 818-834. doi:10.1177/0890117121992295.

Mongiało, D. (2007). Czynniki wpływające na strukturę rynku usług. Gospodarka Narodowa. *The Polish Journal of Economics*, 3, pp. 85-98.

Morshidi, S., Ahmad Abdul Razak, & Yew Lie Koo. (2011). Trade in Services and Its Policy Implications: The Case of Cross-Border/ Transnational Higher Education in Malaysia. *Journal of Studies in International Education*, 15(3), pp. 241-260. https://doi.org/10.1177/1028315309334878.

Muhlemann, A.P., Oakland, J.S., & Lockyer, K.G. (2001). *Zarządzanie produkcją i usługami*. PWN, Warszawa, 650.

Nix, A.N., Bertrand Jones, T., Daniels, H., Hu, P., & Hu, S. (2021). "There's So Much That We're Doing": How Florida College System Institutions Address Basic Needs Insecurity Among Students. *Community College Review*, 0(0), https://doi.org/10.1177/00915521211047674.

Okulich-Kazarin, V., Bokhonova, Y., & Ruda, V. (2022). Do Humanity Student New Needs Meet the State Decisions of Distance Learning during the COVID-19 Epidemic in Ukraine? *FWU Journal of Social Sciences*, 6(1), 107-121, DOI: http://doi.org/10.51709/19951272/Spring2022/7.

Okulich-Kazarin, V., et al. (2020). Three Characteristic Features of the East European Educational Services Market. *Universal Journal of Educational Research*, 8(4), 1549-1556, DOI: 10.13189/ujer.2020.080449.

Pająk, E., Kozieradzka, A., & Klimkiewicz, M. (2014). *Zarządzanie produkcją i usługami*. PWE, Warszawa.

Sehoole, C.T. (2004). Trade in Educational Services: Reflections on the African and South African Higher Education System. *Journal of Studies in International Education*, 8(3), pp. 297-316, https://doi.org/10.1177/1028315304265430.

Selvamuthu, D., & Das, D. (2018). *Introduction to Statistical Methods, Design of Experiments and Statistical Quality Control*. Springer Nature Singapore Pte Ltd., https://doi.org/10.1007/978-981-13-1736-1.

Styś, A. (2001). *Zarządzanie marketingowe w sferze usług*. Wydawnictwo Akademii Ekonomicznej im. Oscara Langego we Wrocławiu, Wrocław.

Szopiński, T. (2023). University Students` Attitude to E-learning in the Post-COVID-19 Era. *Contemporary Economics*, 17(3), 311-322. DOI:10.5709/ce.1897-9254.512.

Vauterin, J.J., Linnanen, L., & Marttila, E. (2011). Customer Orientation in Higher Education: The Missing Link in International Student Recruitment?: A Relationship Marketing Approach. *Industry and Higher Education*, 25(2), pp. 77-91, https://doi.org/10.5367/ihe.2011.0034.

Uncles, M.D. (2018). Directions in Higher Education: A Marketing Perspective. *Australasian Marketing Journal*, 26(2), 187-193, https://doi.org/10.1016/j.ausmj.2018.05.009.

Ustawa z dnia 20 lipca 2018 r. – Prawo o szkolnictwie wyższym i nauce, 2018.

Wali, A.F., & Andy-Wali, H.A. (2018). Students as Valuable Customers: Integrating a Social Media Marketing Platform into Customer Relationship Management Capabilities for Marketing Higher Education Services. *Paradigm*, 22(1), pp. 1-16, https://doi.org/10.1177/0971890718758197.

USE OF ARTIFICIAL INTELLIGENCE IN HIGHER EDUCATION: STUDYING THE NEEDS OF UKRAINIAN STUDENTS

Abstract: Aim: The aim of the research is to obtain new quantitative and qualitative data on the educational needs of Ukrainian students. These needs concern the use of Artificial Intelligence in higher education.
Methods: In the study the voluntary and anonymous questionnaire survey of 4 groups of respondents was applied. The authors used a questionnaire of their own design. The questionnaire contained 4 metric questions and 12 essential questions. This article analyses the answers to the question 8: How often do you need to use Artificial Intelligence in the learning process? The question contained 5 answer options on a standardized scale. Excel 2016 was used to analyze the data. The verification of statistical hypotheses was performed according to the standard methodology. The authors suggested the null hypothesis H_0 and the alternative hypothesis H_1. The null hypothesis H_0: all students need to use AI in higher education. The alternative hypothesis H_1: not all students need to use AI in higher education.
Respondents: The survey involved 901 respondents from Khortytsia National Educational and Rehabilitation Academy (Ukraine). The groups of respondents were formed in accordance with the generally accepted methodology of empirical research. Three groups of students and a group of teachers were interviewed. Teachers were doing their advanced training. Among the respondents there were 112 males, 783 females and 6 people identifying their gender identity differently.
Results: For students' educational needs the alternative hypothesis was accepted: not all

students need to use AI in higher education. With regard to teachers, the null hypothesis was confirmed: all students need to use AI in higher education. Both scientific results are accepted with a high significance level of 0.01. New qualitative and quantitative scientific data should be taken into account in the management of educational services when making managerial and pedagogical decisions.

Keywords: higher education, students, students' needs, artificial intelligence

WYKORZYSTANIE SZTUCZNEJ INTELIGENCJI W SZKOLNICTWIE WYŻSZYM: BADANIE POTRZEB UKRAIŃSKICH STUDENTÓW

Streszczenie: Cel: celem badania jest uzyskanie nowych ilościowych i jakościowych danych na temat potrzeb edukacyjnych studentów z Ukrainy. Potrzeby te dotyczą wykorzystania sztucznej inteligencji w szkolnictwie wyższym.
Metody: w badaniu wykorzystano dobrowolne i anonimowe kwestionariusze dla 4 grup respondentów. Autorzy wykorzystali kwestionariusz własnej konstrukcji. Kwestionariusz zawiera 4 pytania metryczne i 12 pytań merytorycznych. W tym artykule przeanalizowano odpowiedzi na pytanie nr 8: Jak często potrzebujesz używać sztucznej inteligencji w procesie uczenia się? Pytanie zawiera 5 opcji odpowiedzi w standardowej skali. Do analizy danych wykorzystano programy komputerowe Excel 2016. Weryfikacja hipotez statystycznych odbywa się zgodnie ze standardową techniką. Autorzy przyjęli hipotezę zerową H_0 i alternatywną hipotezę H_1. Hipoteza zerowa H_0: wszyscy studenci mają potrzebę wykorzystania sztucznej inteligencji w szkolnictwie wyższym. Alternatywna hipoteza H_1: nie wszyscy studenci mają potrzebę wykorzystania sztucznej inteligencji w szkolnictwie wyższym.
Respondenci: w badaniu wzięło udział 901 respondentów z Khortytsia National Educational and Rehabilitation Academy (Ukraina). Grupy respondentów zostały utworzone zgodnie z ogólnie przyjętą metodą badań empirycznych. Przeprowadzono wywiady z 3 grupami studentów i grupą nauczycieli. Nauczyciele podnosili swoje kwalifikacje. Wśród respondentów było 112 mężczyzn, 783 kobiety i 6 osób identyfikujących swoją płeć w inny sposób.
Results: w odniesieniu do potrzeb edukacyjnych, dla studentów przyjęto hipotezę alternatywną: nie wszyscy studenci mają potrzebę wykorzystania sztucznej inteligencji w szkolnictwie wyższym. W odniesieniu do nauczycieli przyjęto hipotezę zerową: wszyscy nauczycieli mają potrzebę wykorzystania sztucznej inteligencji w szkolnictwie wyższym. Oba wyniki naukowe przyjęto z wysokim poziomem istotności 0.01. Nowe jakościowe i ilościowe dane naukowe należy wziąć pod uwagę przy zarządzaniu usługami edukacyjnymi, w tym przy podejmowaniu decyzji zarządczych i pedagogicznych.

Słowa kluczowe: szkolnictwo wyższe, studenci, potrzeby studentów, sztuczna inteligencja