RESEARCH ON THE INTENTIONS OF STARTING AN E-BUSINESS IN STUDENT COMMUNITY

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Purpose: The conducted research dedicated to distinguishing the intentions of starting one's own e-business in the contemporary student environment focuses on the search for correlations between the actual degree of use of Internet technologies in the educational process and daily life, the level of students' acceptance of new technological solutions, and the perceived value from running one's own e-business.

Design/methodology/approach: The study presented here is qualitative in nature. Data was collected on the basis of a voluntary survey of students who studied at Polish universities in the 2023/2024 and the 2024/2025 academic year.

Findings: The study presented here is qualitative in nature. Data was collected on the basis of a voluntary survey of students who studied at Polish universities in the 2023/2024 and the 2024/2025 academic year. The conducted research led to conclusions: 1) the modern student has a high level of technological skills and makes high use of Internet technologies in the educational process and daily life; 2) the increase in the degree of use of Internet technologies contributes to the technological skills and competencies of the modern student, which results in a high level of acceptance of new technological solutions in the student community; 3) the modern student has good intentions with regard to starting their own business for the reason that they perceive great benefits and values from e-business.; 4) the increase in the degree of use of Internet technologies increases the perceived value from own e-business and the high level of acceptance of new technological solutions positively affects the perceived values from starting own e-business.

Originality/value: This leads to the conclusion that establishing one's own e-business is the basis for modern students to validate and update a new technological system. This element is intended to serve as a link between theory and practice, and is also a foundation for the development of the higher education system.

Keywords: e-business; modern student; acceptance of new technological solutions; intention; start own e-business.

Category of the paper: Research paper.

1. Introduction

Modern life is characterized by a sustainable approach to planning and organizing all socio-economic processes, namely the practical implementation of the Concept of Sustainable Development. This concept and the course of its implementation are presented in detail in Agenda 2030 (United Nations, 2015) and concerns the progressive economic transformation on a global scale. The foundation of this transformation is the digital transformation, which has already permanently entered our lives and continues to shape it technologically, bringing cardinal changes to the existing processes of communicating (Colombo et al., 2017; Morrar et al., 2017; Lee et al., 2018; Diaz et al., 2012), consuming (Jung, 2017; Fernandes et al., 2024), studying (Elayyan, 2021), looking for work and carrying (Arntz et al., 2016; Autor, Dorn, 2013; Dries, Verbruggen, 2012) out other socio-economic activities (More, Soumaya, 2019; Farah et al., 2022).

The world of the digital economy is characterized by both the emergence of new challenges and the formation of new opportunities. The shaping of new opportunities in the digital world is closely linked to the acceleration of business processes (Chou, 2018; Mahlangu, Leke, 2024; Munsamy, Telukdarie, 2022; Soh, Connolly, 2020), the simplification of access to diverse tools necessary for economic and daily life, and the delegation of a significant range of activities to devices operating on the basis of artificial intelligence. Such a technological transformation greatly facilitates the process of running a sustainable business, that is, a business that cares not only about current profits, but also about people, the environment and future generations (Baroni, 2024).

Many scientific studies indicate that the digitization of the economy and social life has greatly accelerated information processing and opened up new opportunities for the use of Internet technologies in all areas of human life. As a result of the widespread emergence of Internet technologies, artificial intelligence, big data and other digital tools, business structures have gained new opportunities in the organization of production/service processes and new prospects for development (Benjamin, 2020; Whalley et al., 2021; Hargreaves et al., 2022; Liu et al., 2022). The advancing digitization opens up new opportunities for personal development, especially for young people just entering the path of life. Thanks to Internet tools and artificial intelligence young people are in a better position to organize their lives, analyze their needs and opportunities, and on this basis manage their personal development in a way that meets their own and society's needs (Pan et al., 2016; Miranda et al., 2015; Hiremath et al., 2015). All this contributes not only to improving the daily functioning of business structures and individual people, but also affects the implementation of a long-term strategy for sustainable development of the whole world (Wortmann, Flüchter, 2015; Rowe, Fudge, 2003).

The formation of today's digital economy directed towards sustainability is strongly based on electronic business. It is worth noting that since the end of the last century e-business has firmly entered various areas of economic life, and in the post-COVID-19 years it has already become an indispensable part of society's daily life. Internet technologies are opening up new horizons for the formation of innovative business strategies, and e-business is becoming a launching pad for many young people capable of both creative thinking and proactive action. It is worth adding that entering the e-business zone strongly involves risks and multiple challenges. This is primarily about issues related to cyber security in all its aspects (Hatzivasilis et al., 2020; Maalem et al., 2020; Śliwiński, Piesik, 2021).

The study conducted investigates the intentions of starting one's own e-business in the student community. The study is based on the technology-personal-environment (TPE) paradigm (Jiang et al., 2010): technology - Internet technologies, as technologies used to conduct e-business; person - as a set of personality (behavioral) variables affecting the process of acceptance of new technological solutions and perceived values from one's own e-business; environment - as a set of implicit social rules towards the use of Internet technologies, which can be both imposed and sustained by the attitudes and behaviors of individuals.

2. Theoretical Underpinning and Literature Review

The theoretical underpinning of the research conducted is the Technology Acceptance Model, which reflects human-computer interaction and explains how users adopt and accept new technologies. The problems of user acceptance of technology were first addressed by American scientist Fred Davis in his doctoral thesis (Davis, 1986). The author, basing his research on the behavior of users and their intentions to use new technologies, sought the essence of the relationship between the layout of a technological system and the user's acceptance of that system. The proposed model was presented as a construct of two variables, i.e., perceived usefulness and ease of use of the technology. In 1989, as a continuation of the research presented in his doctoral dissertation, Fred Davis's article "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology" (Davis, 1989) was written, in which the author, on a new scale, developed the study of the previously extracted two determinants of technology acceptance - perceived usefulness and perceived ease of practical use. Perceived Usefulness was defined as the degree of improvement in productivity and efficiency recognized by the user of new technologies. Perceived Ease of Use - as the degree to which the user believes that new technologies can be learned quickly and using them is easy. Davis's research indicated that a user's behavior and acceptance of a new technology is influenced more by the user's perception of the usefulness of the technology than the ease of use. In contrast, the perceived ease of use of a technology has a correlation with the perceived

usefulness of the technology and can be a direct motivation for the use of that technology. This is how the conclusion was drawn that perceived usefulness and ease of use determine users to use new technologies.

Many contemporary researchers recognize that individual user attitudes toward new technologies have a key impact on whether a technology is adopted or rejected. Thus, a researcher from Malaysia in the paper "A Literature Review on The Technology Acceptance Model" (Martin, 2022), a research team from Iran and the US M. Yadegari, S.D. Mohammadi, A.H. Masoumi, in the paper "Technology adoption: ananalysis of the major models and theories" (Yadegari et al., 2022), South African researchers M. Mkhonto and T. Zuva, in their paper "Technology Acceptance: A Critical Review of Technology Adoption Theories and Models" (Mkhonto, Zuva, 2024) offer a review of theories explaining how personal acceptance influences technology use behavior. Also in 2024 is a paper by F. Davis co-written with A. Granic: "The Technology Acceptance Model 30 Years of TAM" (Davis, Granić, 2024)., in which the authors describe the process of development of the TAM theory, conduct a review of research in the field from 2003-2023, and provide scenarios for future transformations of the theory. The overall result of the research conducted is that the success of any new technology is highly dependent on the level of acceptance of that technology by individual users. The research question remains whether we should consider the user as an individual unit or as a collection of units that make up society, and to what extent the individual unit influences the decision to reject or accept a new technology by society. This research problem, in fact, can also be reversed by examining the influence of society on an individual's behavior and the individual's ultimate acceptance or rejection of a new technology.

The most popular theories related to user adoption of technology in addition to Davis's theory (Technology Acceptance Model) include:

- Unified Theory of Acceptance and Use of Technology (UTAUT) - the theory shows the influence of expected technology performance, expected user effort, facilitating and social conditions on the level of acceptance of new technologies (Marikyan, Papagiannidis, 2023).
- Diffusion of Innovations (DOI) - the theory describes the ways in which new ideas and technologies spread between cultures (Rogers, 2003).
- Theory of Planned Behavior (TPB) - the theory examines the influence of subjective norms and behavioral intentions on the variability of actual human behavior (Ajzen, 1991).
- Social Cognitive Theory (SCT) - the theory emphasizes the role of observational learning and imitation in shaping patterns of human behavior, including acceptance of new systems and technologies (Bandura, 1986).

- Innovation Resistance Theory (IRT) - the theory distinguishes the reasons why an individual resists the introduction of systemic changes and new technologies (Ram, 1987).
- Task-Technology Fit (TTF) - this model views technology as a tool to perform a specific task and shows that the condition for acceptance of technology is that it fits the task, performed by the user (Goodhue, 1995).
- Expectancy-Value Theory (EVT) - the theory assumes that users' decisions are shaped by their expectations of the values obtained (Eccles, 1983).
- Cognitive Dissonance Theory- the main postulate of this theory is that people feel discomfort when there are contradictions between their beliefs and behaviors. By definition, people strive to reduce dissonance, which in turn can negatively affect the process of technology acceptance (Festinger, 1957).

An analysis of the above-mentioned theories allows us to identify the most important determinants of human acceptance of technology. First and foremost are the factors from Davis's theory, namely the perceived usefulness of the technology and the perceived ease of use. In addition to these two primary factors are:

- facilitating conditions (i.e., the technological infrastructure available to the user),
- user attitudes (in other words, the user's individual attitudes toward the technology, their experiences and preferences),
- trust in the technology and the level of perceived security (for example, protection of personal data, phishing scams or theft of money),
- socio-cultural factors (i.e., the level of acceptance of the new technology by the user's social environment, for example, acceptance of the technology by the user's peers, the influence of organizational culture on technology use, religious background) (Mkhonto, Zuva, 2024).

Identifying these determinants is itself the basis for understanding the reasons for adopting(accepting) or rejecting a new technology.

In their work based on the Technology Acceptance Model and other related TAM theories, researchers from around the globe are also undertaking research in the process of acceptance of modern technologies in specific areas of socio-economic life. Among the recent works emerging in this research area, we can highlight the following.

A study of the acceptance and use of e-money technology. The results of this work show that perceived ease of use and perceived usefulness affect people's attitudes toward the use of e-money, which in turn positively affects the actual use of e-money (Harnida, Mardah, 2023).

A study of the adoption process of technology based on the use of artificial intelligence to shape the supply chain (Venkatesh et al., 2023).

A study of factors influencing user behavioral attitudes toward the use of autonomous vehicles. The results of the study showed the influence of perceived usefulness, perceived ease of use and perceived innovation features on users' behavioral intentions to use autonomous vehicles (Yuen et al., 2020).

A study of the impact of perceived safety on the acceptance and use of autonomous vehicles in terms of the main demands of TAM. The results of the study indicated that the issue of perceived safety of autonomous vehicles has a significant direct impact on the user's intention in accepting this technology and dominates the perceived ease of use (Yao et al., 2023).

A study of cell phone user behavior influencing purchase decisions of these mobile devices. In this study, the researchers attempted to isolate the factors influencing the behavior of cell phone users in terms of their acceptance of brand switching and the technology used. The results of the conducted study showed that the factors that are key elements of the experience, namely the experience itself, expectations and emotions accompanying the experience form, on the one hand, resistance to changing the preferred and favorite brand, and on the other hand, they constitute a barrier to accelerated implementation of innovative solutions in the applied technology. This results in the fact that "loyalty" to a brand can limit the availability of new solutions, which is a guarantee for the company, but slows down the adaptation of innovative solutions (Reddy et al., 2022).

A study of user behavioral intentions in the acceptance of insideable technology in relation to non-medical implant information systems. The results of the study proved that acceptance of non-medical implant technology can be explained by perceived usefulness, perceived ease of use, social influence and perceived enjoyment (de Andrés-Sánchez et al., 2024).

A study of technology acceptance in educational settings. The study was directed at understanding user behavior in the context of voluntary use of modern educational technologies and indicates that attitudes toward the use of these technologies are explained by the relationship between perceived ease of use, perceived usefulness and intention to use (Or, 2024).

3. Research Methodology

3.1. Research Model

The research model presented in this study was oriented toward determining the intentions of modern college students to start their own e-business. It was assumed that these intentions depend, on the one hand, on the perceived value of running one's own e-business (HG1) and, on the other hand, on the level of acceptance of new technological solutions (HG2).

HG: Intentions to start one's own e-business dependent on perceived value (HG1) and level of acceptance of new technological solutions (HG2).

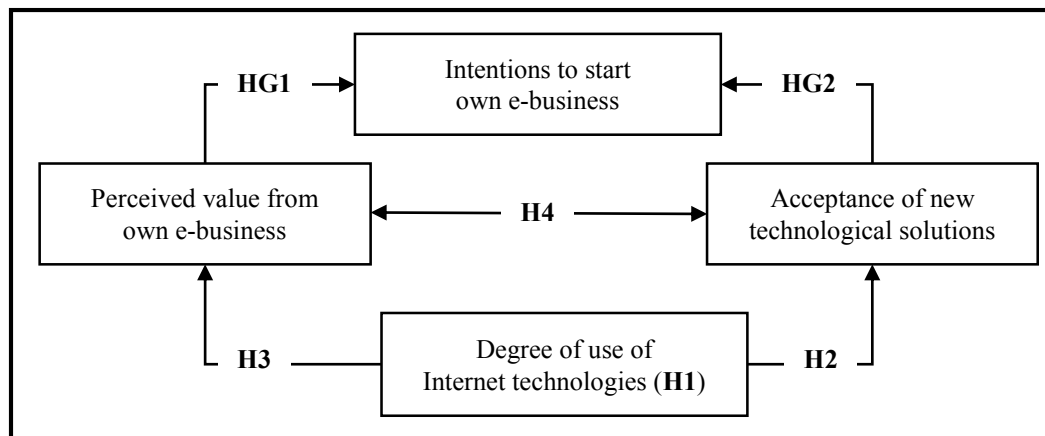This approach allows us to define the main hypothesis as the effect of combining two determinants (Figure 1).

Figure 1. Complex systems of polygamous holes made from one cluster to several coal deposits.

In search of confirmation/rejection of the main hypothesis, research questions Q1 and Q2 and the hypotheses for answering these questions (H1-H2 and H3-H4) are formed.

Research question Q1: What level of technological skills and experience of using Internet technologies does the modern student have, and how does this affect his or her acceptance of new technological solutions?

H1. The modern student has a high level of technological skills and makes high use of Internet technologies in the educational process and daily life.

H2. The increase in the degree of use of Internet technologies contributes to increasing the technological skills and competencies of the modern student, which contributes to increasing the level of acceptance of new technological solutions in the student community.

Research question Q2: What is the perception of the modern student regarding e-business?

H3. The increase in the degree of use of Internet technologies raises the perceived value from one's e-business.

H4. The high level of acceptance of new technological solutions positively influences students' perceptions of the value added from starting their own e-business.

3.2. Research sample

The study presented here is qualitative in nature. Data was collected on the basis of a voluntary survey of students who studied at Polish universities in the summer semester of the 2023/2024 academic year and the winter semester of the 2024/2025 academic year. The total number of respondents was 340, which corresponds to the size of a representative sample (Table 1). The representative sample size was calculated using the sampling calculator assuming the following parameters: fraction size - 0.5; maximum error - 5%; confidence level α - between 93 and 94%; the number of students in higher education institutions in Poland in the academic year 2023/2024 - 1245153 people.

Table 1.
Profile of respondents

Parameter	Number of respondents	%
Gender		
male	167	49.12
female	165	48.53
other	3	0.88
prefer not to answer	5	1.47
Total	340	100.00
Generation		
Z (born 1995-2010)	327	96.18
Y (born 1981-1994)	10	2.94
X (born 1965-1980)	3	0.88
Year of study		
I	109	32.06
II	60	17.65
III	61	17.94
IV	66	19.41
V	44	12.94
Level of study		
Bachelor's degree	92	27.05
Master's degree	67	19.71
Uniform engineering studies	58	17.06
Uniform master's degree	123	36.18
Field of study		
Physiotherapy	123	36.18
Management	101	29.71
Economics	51	15.00
Electrical engineering	30	8.82
Data analytics in business	28	8.24
Tourism and recreation	5	1.47
Law	1	0.29
Production engineering and management	1	0.29

The students included in the research group are representatives of five Polish state universities (Opole University of Technology, Opole University, Warsaw University of Technology, Warsaw University, University of Economics in Katowice) from eight different majors: Physiotherapy (36.18%), Management (29.71%), Economics (15.00%), Electrical Engineering (8.52%), Business Data Analytics (8.24%), Tourism and Recreation (1.47%), Law (0.29%), Production Engineering and Management (0.29%). Students participating in the survey undertook studies in single master's (36.18%), bachelor's (27.05%), master's (19.71%), single engineering (17.06%). The survey covers students from all years of study. The vast majority of respondents refer to Generation Z (96.18%). Male gender was indicated by 49.12% of respondents, female by 48.53%, other by 0.88%, and 1.47% of respondents preferred not to answer this question. Further in the survey, the authors do not take into account the gender identity of respondents and do not focus on the field of study represented.

3.3. Research tools

The research tool was an anonymous online survey made in Google Forms. The research survey included closed questions. In order to evaluate individual phenomena related to the research area, the survey used a linear scale from 1 to 5 points. The process of filling out the survey took about 15-20 minutes. The research questionnaire included questions about the sociogeographical data of the respondents (shown in Table 1) to determine the silhouette of the research sample, as well as factual questions about the intentions of modern students to start their own e-business.

4. Results

4.1. Research question 1

Q1: What level of technological skills and experience of using Internet technologies does the modern student have, and how does this affect his/her acceptance of new technological solutions?

First, students were asked to answer the question, "How often do you use the Internet?" All respondents marked the answer "every day".
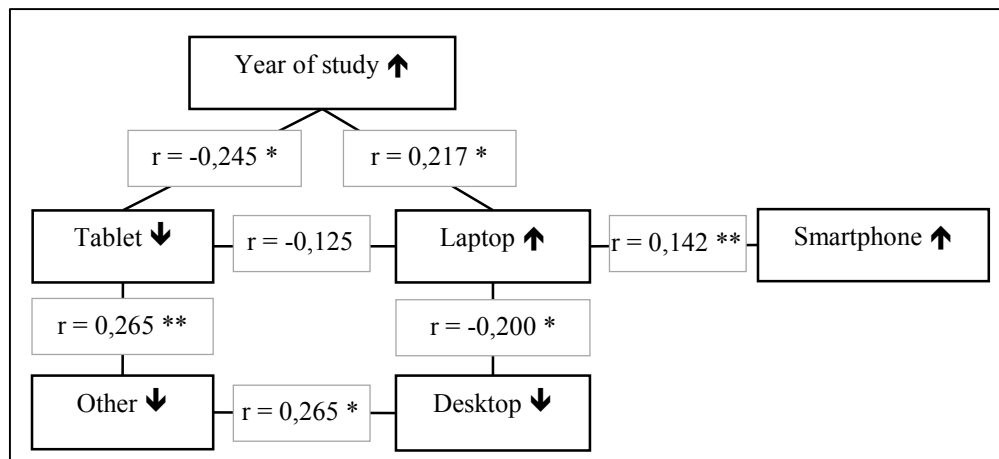
Another question "What devices do you usually use to access the Internet?" was to determine the preference of today's students for devices to access the Internet such as desktop, laptop, smartphone, tablet and others (respondents were asked to give ratings on a scale from 1 (almost never) to 5 (almost always)). The results of the survey indicate that currently the most popular device for accessing the Internet among students is a smartphone (the average rating was 4.75), followed by a laptop (rating of 3.21), in third place - a desktop computer (2.28), followed by a tablet and other devices (average rating of less than 2.00) (Table 2).

Table 2.
Evaluation of the degree of use of devices to access the Internet

Parameter	Device Type				
	Desktop	Laptop	Smartphone	Tablet	Other
Rating, points:	Number of respondents				
1	164	55	1	242	274
2	58	42	3	16	29
3	29	85	3	37	23
4	37	94	67	26	11
5	52	64	266	19	3
Average score, points	2.28	3.21	4.75	1.72	1.35
Sum of points earned by individual device types	775	1090	1614	584	460
Maximum possible sum of points for individual device types	1700	1700	1700	1700	1700
Percentage of points earned by individual device types, %	45.59	64.12	94.94	34.35	27.06
Sum of points earned by all device types	4523				
Usage structure of individual device types, %	17.14	24.10	35.68	12.91	10.17

An analysis of the distribution of ratings obtained by each type of device shows a consistency of opinion among respondents regarding the degree of use of smartphones (78% of respondents indicated that they almost always use a smartphone to access the Internet). However, in the case of laptops (the second most popular device), students' opinions were divided - a rating of "5" was given by 19% of respondents, ratings of "4" and "3" - 53%, and the remaining 28% put ratings of "2" and "1" respectively. Analysis of the structure of use of the mentioned devices shows that the frequency of use of a smartphone as a device to access the Internet i 1.5 times higher than that of a laptop and 2 times higher than that of a desktop computer. The results of the survey provide a basis for concluding that students' preferences for using devices to access the Internet change depending on the year (level) of study. Namely, the higher the year of study the more students are inclined to use the "symbiosis" of two devices - "smartphone-laptop" and the less they use tablets, desktop computers and other devices. In other words, in the course of studying, students strive to maximize efficiency in the combination of their mobility and the functionality of the devices they use (Figure 2).

* Statistical significance at the p = 0.01 level (p <= -0.14232 V p => 0.14232) at n = 340, where n is the number of respondents.

** Statistical significance at the p = 0.05 level (p <= -0.10760 V p => 0.10760) at n = 340, where n is the number of respondents.

Figure 2. Correlation between year of study and degree of use of devices to access the Internet.

The next group of questions the respondents were asked was to rate on a scale of 1 to 5 their level of experience in using digital devices and Internet technologies. Analysis of the responses shows that the vast majority of today's students (82%) refer themselves to experienced and very experienced users of computers and other digital devices. At the same time, 90% of all respondents indicated that they feel positive and very positive about their time using various Internet technologies. As for the ways in which Internet technologies are used in everyday life, to a great and very great extent these technologies are used by 40% of respondents for work, 75% for education, 85% for entertainment, 90% for communication with the environment, 29% for online shopping. As many as 87% of the surveyed students indicate the positive and very positive impact of online technologies on the educational process and that they use these

technologies for educational purposes daily or almost daily. In contrast, the frequency of daily online shopping was noted by only 9% of all respondents, online shopping several times a week was marked by 25% of respondents (Table 3).

Table 3.
Evaluation of the experience of using digital devices and online technologies
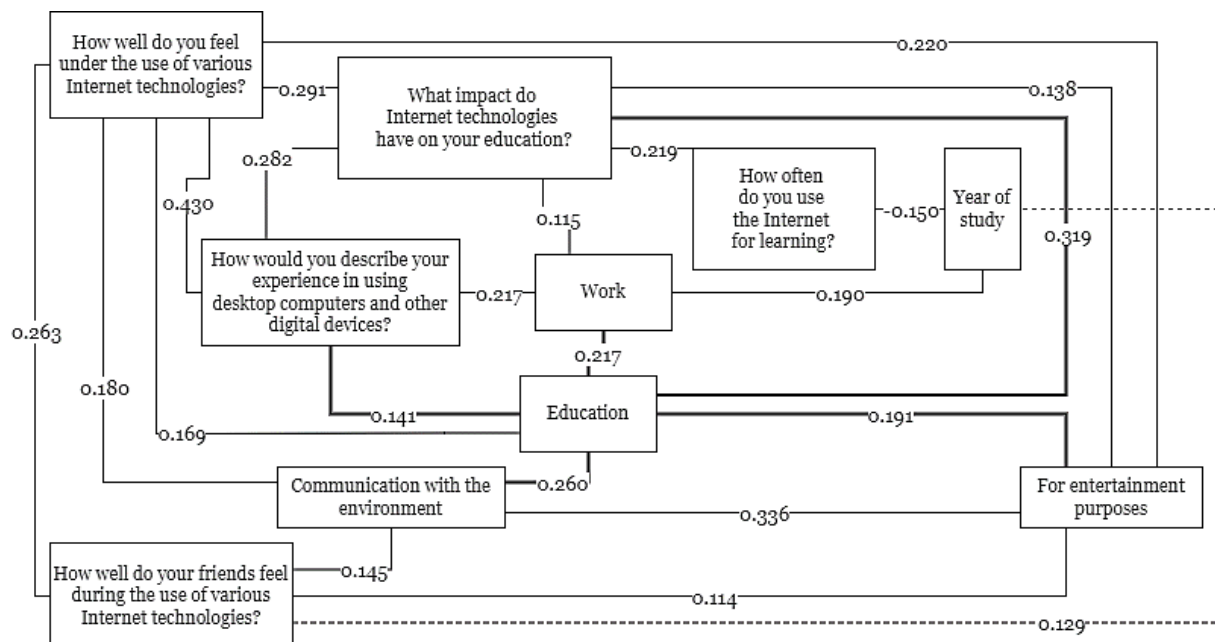
Question	Rating (points)	Number of people	Share, %
1. How would you describe your experience in using desktop computers and other digital devices?	Very experienced (5)	98	28.82
	Experienced (4)	182	53.53
	Moderately experienced (3)	58	17.07
	Beginner (2)	1	0.29
	No experience (1)	1	0.29
2. How well do you feel under the use of various Internet technologies?	Very positive (5)	188	55.29
	Positive (4)	118	34.71
	Neutral (3)	30	8.82
	Negative (2)	4	1.18
	Very negative (1)	0	0.00
3. How well do your friends feel during the use of various Internet technologies?	Very positive (5)	138	40.59
	Positive (4)	108	31.76
	Neutral (3)	84	24.71
	Negative (2)	9	2.65
	Very negative (1)	1	0.29
4. To what extent do you use Internet technologies in your daily life, i.e.:			
4.1. in the workplace	To a very great extent (5)	84	24.71
	To a great extent (4)	53	15.59
	In the medium degree (3)	84	24.71
	Below medium degree (5)	45	13.24
	To a very low degree (1)	74	21.75
4.2. for education	To a very great extent (5)	143	42.06
	To a great extent (4)	111	32.65
	To a medium degree (3)	74	21.76
	Below medium degree (5)	11	3.24
	To a very low degree (1)	1	0.29
4.3. for entertainment purposes	To a very great extent (5)	198	58.24
	To a great extent (4)	93	27.35
	To a medium degree (3)	39	11.47
	Below medium degree (5)	6	1.76
	To a very low degree (1)	4	1.18
4.4. to communicate with the environment	To a very great extent (5)	231	67.94
	To a great extent (4)	77	22.65
	To a medium degree (3)	28	8.23
	Below medium degree (5)	2	0.59
	To a very low degree (1)	2	0.59
4.5. for online shopping	To a very great extent (5)	41	12.06
	To a great extent (4)	57	16.76
	To a medium degree (3)	88	25.88
	Below medium degree (5)	58	17.06
	To a very low degree (1)	96	28.24
5. What impact do Internet technologies have on your education?	Very positive (5)	117	34.41
	Positive (4)	180	52.94
	Neutral (3)	41	12.06
	Negative (2)	2	0.59
	Very negative (1)	0	0.00

Cont. table 3.

6. How often do you use the Internet for learning?	Daily (5)	149	43.82
	Almost every day (4)	146	42.94
	Once a week (3)	30	8.82
	Rare (2)	13	3.83
	Almost never (1)	2	0.59
7. How often do you use the Internet to purchase goods and services?	Every day (5)	31	9.12
	Several times a week (4)	86	25.29
	Once a week (3)	112	32.94
	Rarely (2)	107	31.47
	Almost never (1)	4	1.18

Summarizing the results of the analysis of the responses to the questions on the evaluation of the experience of the modern student in the use of digital devices and Internet technologies we can conclude the following (Figure 3):

- there is a positive relationship between the level of experience with the use of Internet technologies and the use of these technologies in work and education, entertainment and online shopping,
- according to the opinion of students, Internet technologies reflect positively on the educational process,
- with each successive year of study, according to students, their technological skills increase, which in turn results in an increase in the degree of use of Internet technologies not only in the course of education and daily life, but also for the purpose of getting a job.

* Statistical significance at the p = 0.01 level (p <= -0.14232 V p = > 0.14232) at n = 340, where n is the number of respondents; Statistical significance at the p = 0.05 level (p <= -0.10760 V p => 0.10760) at n = 340, where n is the number of respondents.

Figure 3. Correlation* between the obtained answers to the questions on the evaluation of the experience of the modern student in the use of digital devices and Internet technologies.

The next question in the survey concerned the challenges and risks students faced when using Internet technologies. Respondents were asked to rate on a scale of 1 (hardly ever encountered) to 5 (very often encountered) the frequency of technical problems, problems related to access to technology, level of technological skills, cyber security, other problems (Table 4).

Table 4.
Rating of frequency of challenges and risks when using online technologies

Parameter	Type of challenge or threat				
	Technical problems	Lack of access to technology	Lack of technological skills	Cybersecurity	Other
Rating, points:	Number of respondents				
1	15	96	124	64	184
2	54	119	98	109	69
3	129	75	86	105	67
4	90	29	21	45	13
5	52	21	11	17	7
Average score, points	3.32	2.29	2.11	2.54	1.79
Sum of points obtained by individual challenge and threat types, points	1130	780	717	862	610
Maximum possible sum of points obtained in individual challenge and threat categories, points	1700	1700	1700	1700	1700
Level of perceived threat, %	66.47	45.88	42.18	50.71	35.88
Sum of points obtained from all challenge and threat categories, points	4099				
Structure of challenges and threats, %	27.57	19.03	17.49	21.03	14.88

Analysis of students' responses shows that the overall perceived level of challenges and risks associated with the use of Internet technologies is 48%.

$$OPWiZ = \frac{\sum S_i}{\sum M_i \times n} = \frac{4099}{1700 \times 5} \times 100 = 48.22$$

where:

$OPWiZ$ – the overall perceived level of challenges and risks associated with the use of Internet technologies,

$\sum S_i$ – the sum of points obtained from all categories of challenges and threats, pt,

$\sum M_i$ – the maximum possible sum of points obtained from each category of challenges and threats, pts,

n – the number of categories of challenges and threats related to the use of Internet technologies studied.

The biggest challenge at the time of using Internet technologies for our respondents is technical problems, their share in the structure of all challenges is almost 28% (78% of the surveyed students put a rating from 3 to 5, the average rating from the question was 3.32, and the level of this threat from the students' point of view is almost 67%). The second most important problem is considered by respondents to be cyber security (share of the challenge structure - 21%, average rating from the question - 2.54, threat level - 51%). Lack of access to technology ranks third (19% - share of the challenge structure). Lack of technological skills ranks fourth (18% - share of the challenge structure), but it is noteworthy that the majority of respondents (91%) rated this threat as insignificant and put ratings between 1 and 3 (Table 4). In other words, students are aware of the occurrence of various technological challenges, but are not afraid of these challenges due to the high level of technological skills in their own self-assessment.

In the next part of the survey, the respondents were asked to self-assess their ability to accept new technological solutions. On a scale of 1 to 5, students were asked to answer five questions (Table 5).

Table 5.
Self-assessment of students' ability to accept new technological solutions

Parameter	Questions				
	How do you rate your ability to obtain new competencies in technological skills?	How do you rate your colleagues' ability to obtain new competencies in technological skills?	How often do you seek out new information and resources on technology?	How good are you at solving problems related to new technology?	How comfortable do you feel using new technology to create new things and solve problems?
Rating, points:	Number of respondents				
1	4	3	2	3	2
2	24	20	53	24	13
3	145	137	142	149	125
4	108	139	103	122	125
5	59	41	40	42	75
Average score, points	3.57	3.57	3.37	3.52	3.76
Total points obtained according to individual questions	1214	1215	1146	1196	1278
Sum of points obtained from all questions	6049				
Maximum sum of points to be obtained by individual questions	1700	1700	1700	1700	1700
Share of points obtained by individual questions, %.	71.41	71.47	67.41	70.35	75.18

Analysis of the responses indicates that today's student shows a high level of ability to acquire new technological competence. 92-93% of all respondents gave a positive assessment of their ability and the ability of their peers to obtain new technological competencies, with an average of 51% rating their ability at 4 and 5. 84% of all respondents indicated that they often seek new information and technological solutions, with 42% putting ratings of 4 and 5 (i.e., often and very often). 92% of all respondents indicated that they are good at solving problems with new technology, and 96% of respondents indicated that they feel comfortable using new technology to create new things and solve problems. Summarizing the answers to the questions in this pool we can conclude that the modern student in his or her own assessment has a high level of acceptance of new technological solutions.

4.2. Research question 2

Q2: What is the perception of the modern student regarding e-business?

In search of an answer to the second research question, students were asked whether they, in general, think about the future of technology and e-business. A positive answer to this question was given by nearly 60% of all respondents. On the other hand, only 9% of the students surveyed indicated that they are already involved in e-business, while 18% said that they definitely want to start their own e-business in the future, 43% of the respondents are thinking about starting their own e-business, but are not sure. At the same time, the vast majority of students, i.e., 98%, have positive attitudes toward the development of Internet technology and e-business, out of these, 50% of respondents are sure that e-business has a positive impact on society, and only 5% say that e-business has or may have a negative impact on the further development trends of society.

In evaluating the benefits of e-business, students indicated first and foremost convenience of use (average rating - 4.47) and availability of goods/services/forms of payment (rating - 4.34), in third place was a wide selection of goods/services/solutions (rating 4.23), and in fourth place was adequate prices (rating - 3.83) (Table 6).
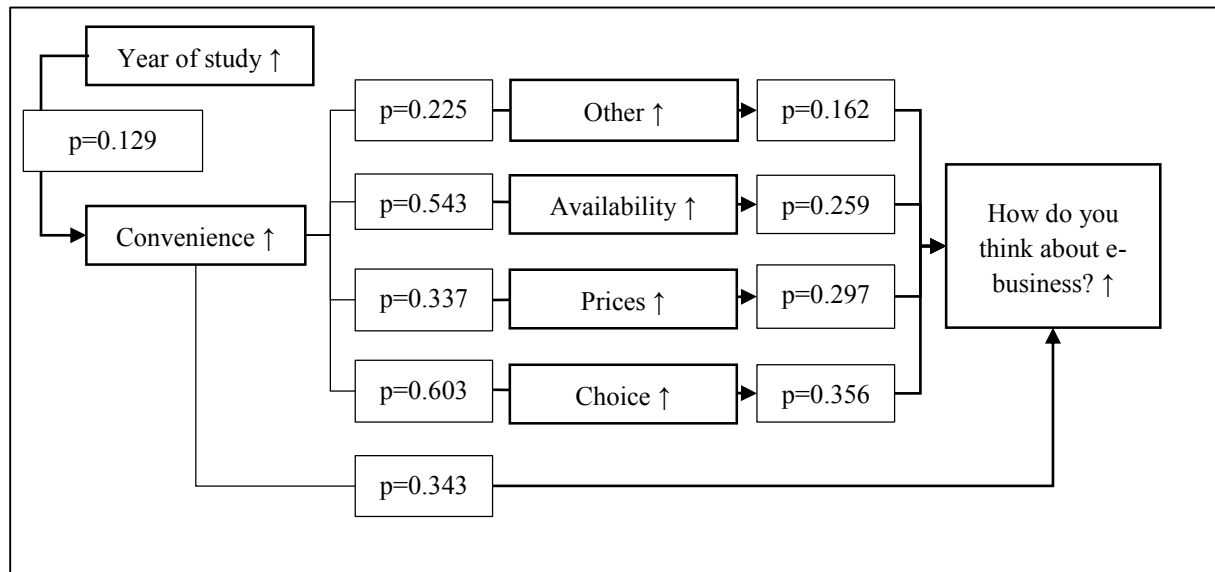
Table 6.
Evaluation of the benefits of e-business in the opinion of the modern student

Indicators	Type of benefits of e-business				
	Convenience	Choice	Prices	Availability	Other
Rating, points:	Number of respondents				
1	3	1	4	2	107
2	3	10	16	10	33
3	28	51	106	41	88
4	103	125	122	103	52
5	203	153	92	184	60
Average score, points.	4.47	4.23	3.83	4.34	2.78
Sum of points obtained within the distinguished types of benefits, points.	1520	1439	1302	1477	945
Maximum possible sum of points obtained under separate types of benefits, points.	1700	1700	1700	1700	1700

Cont. table 6.

Share of points collected, %	89.41	84.65	76.59	86.88	55.59
Sum of points obtained from all evaluations, points.	6683				
Structure of perceived benefits from e-business, %.	22.74	21.53	19.48	22.1	14.14

In conclusion, we can say that the modern student generally has positive attitude towards e-business, perceives its added value and highly appreciates the benefits of this economic phenomenon (Figure 4).

* Statistical significance at the p = 0.01 level (p <= -0.14232 V p => 0.14232) with n = 340, where n is the number of respondents.

Figure 4. Statistically significant relationship* between year of study and perceived benefits from e-business and students' opinion regarding e-business.

An analysis of the correlation coefficients calculated from the students' responses indicates that with an increase in the year of study (and that is, the experience of the students and the degree of use of Internet technologies by the students - hypotheses H1 and H2, which were confirmed in the previous part of this paper) there is an increase in the sense of comfort from e-business, which is highly dependent on "Choice", "Price" and "Availability", which in turn translates into an increase in students' positive attitudes toward e-business.

Another pool of questions in the survey concerned the values that students may perceive from starting their own e-business (Table 7).

Table 7.
Perceived values from starting one's own e-business according to today's students

Question code	Question content	Average rating	Response structure. %				
			1	2	3	4	5
I. Introductory questions							
QK1.1	To what extent are you interested in starting your own business?	3.40	8.82	14.41	30.29	20.59	25.89
QK1.2	What is the likelihood that you will start your own e-business in the next five years?	2.58	23.24	28.53	25.59	12.64	10.00
II. Material (financial) values							
QK2.1	How important is it to you to earn a high income from your own business?	4.29	0.88	2.35	13.82	32.65	50.30
QK2.2	How confident do you feel about managing the finances of your own e-business?	3.18	4.12	17.06	42.35	29.41	7.06
QK2.3	How likely is it that starting an e-business will provide you with financial security? *	3.07	4.41	17.94	48.24	25.29	4.12
III. Intangible values (personal development, self-fulfilment, self-confidence)							
QK3.1	How important is it for you to be your own boss and have control over your work life?	3.88	3.82	9.71	19.71	28.24	38.52
QK3.2	Do you think starting an e-business is a difficult but rewarding experience?	3.76	2.35	5.88	31.47	34.41	25.89
QK3.3	How much satisfaction do you think you would derive from starting your own e-business?	3.58	6.76	10.59	24.41	34.12	24.12
QK3.4	What is the likelihood that starting an e-business would make you feel fulfilled and successful?	3.44	7.65	11.47	29.71	32.06	19.11
QK3.5	How confident do you feel about building a strong brand and reputation for your e-business?	3.41	4.71	13.53	37.35	25.29	19.12

* Choice options: 1 - from 0 to 20%; 2 - from 21 to 40%; 3 - from 41 to 60%; 4 - from 61 to 80%; 5 - from 81 to 100%.

Analyzing the questions from this pool we can deduce that in almost 77% of the surveyed students indicated that they were interested in starting their own business (ratings of 3, 4 and 5), and 22.64% of the surveyed students said that there was a fairly high probability (61% and above) of starting their own e-business in the next five years.

The greatest value that today's students perceive from starting their own e-business is financial, namely "earning a high income from their own business" (average rating from respondents' answers - 4.29, 83% of respondents put ratings of 4 and 5). At the same time, 78% of students indicated that they feel confident about managing the finances of their own e-business and setting up an e-business will provide them with financial security.

The second most important value for students is the opportunity to be their own boss and have control over their own work life (average score - 3.88). Third place is occupied by the satisfaction one can have from setting up one's own e-business (rating - 3.76). It is noteworthy that in assessing the level of satisfaction, 68% of respondents gave ratings of 4 and 5. Almost 51.17% of respondents mark a high level of probability (from 61 to 100%) that starting your own e-business will make you feel fulfilled and professionally successful. At the same time, 82% of respondents feel good about building a strong brand and reputation for their e-business.

Table 8 shows correlation coefficients between values perceived by modern students from starting their own e-business.

Table 8.

Correlation coefficients between values perceived by modern students from starting their own e-business*

Question code	I. Introductory questions		II. Material (financial) values			III. Intangible values (personal development, self-fulfilment, self-confidence)				
	QK1.1	QK1.2	QK2.1	QK2.2	QK2.3	QK3.1	QK3.2	QK3.3	QK3.4	QK3.5
QK1.1	1	0.587	0.395	0.447	0.317	0.500	0.221	0.492	0.440	0.463
QK1.2	0.587	1	0.154	0.370	0.337	0.354	0.216	0.511	0.508	0.507
QK2.1	0.395	0.154	1	0.290	0.201	0.386	0.208	0.349	0.327	0.314
QK2.2	0.447	0.370	0.290	1	0.368	0.274	0.215	0.392	0.347	0.451
QK2.3	0.317	0.337	0.201	0.368	1	0.196	0.177	0.317	0.360	0.287
QK3.1	0.500	0.354	0.386	0.274	0.196	1	0.316	0.440	0.438	0.480
QK3.2	0.221	0.216	0.208	0.215	0.177	0.316	1	0.405	0.359	0.328
QK3.3	0.492	0.511	0.349	0.392	0.317	0.440	0.405	1	0.694	0.586
QK3.4	0.440	0.508	0.327	0.347	0.360	0.438	0.359	0.694	1	0.581
QK3.5	0.463	0.507	0.314	0.451	0.287	0.480	0.328	0.586	0.581	1

* Statistical significance at the $p = 0.01$ level ($p <= -0.14232$ V $p => 0.14232$) with $n = 340$, where n is the number of respondents.

Significance analysis of the correlation coefficients calculated on the basis of the obtained answers to the questions on perceived values from starting one's own e-business (Table 8) indicates that there is a statistically significant relationship between the desire to start an e-business and perceived tangible and intangible values. In other words, when deciding to start their own e-business, students expect not only good financial results, but both professional success and personal development.

5. Discussion and Conclusions

5.1. Theoretical Contributions

The conducted research dedicated to distinguishing the intentions of starting one's own e-business in the contemporary student environment focuses on the search for correlations between the actual degree of use of Internet technologies in the educational process and daily life, the level of students' acceptance of new technological solutions, and the perceived value from running one's own e-business. The research confirmed that the highlighted three elements play a key role in the intentions of starting one's own e-business in the student environment. The results obtained contribute to the development of the TAM (Technology Acceptance Model) theory continuing the research in the field of "human-computer" interaction and explaining how the modern student makes a decision about starting his own e-business.

The search for answers to the first research question (Q1: What level of technological skills and experience of using Internet technologies does the modern student have, and how does this affect his or her acceptance of new technological solutions?) led to the following conclusions:

1) The conducted assessment of the level of use of devices to access the Internet (Table 2, Figure 1) and the assessment of the experience of using digital devices and Internet technologies (Table 3) confirm hypothesis H1. The modern student has a high level of technological skills and makes high use of Internet technologies in the educational process and daily life.

2) The correlation analysis between the answers to the questions to evaluate the experience of the modern student in using digital devices and Internet technologies according to the year of study (Figure 2), the evaluation of the frequency of various types of challenges and risks when using Internet technologies (Table 4), and the self-assessment of the students' ability to accept new technological solutions (Table 5) confirm hypothesis H2. The increase in the degree of use of Internet technologies contributes to the technological skills and competencies of the modern student, which results in a high level of acceptance of new technological solutions in the student community.

The search for answers to the second research question (Q2: What is the perception of the modern student regarding e-business?) allows us to conclude that the modern student has good intentions with regard to starting their own business for the reason that they perceive great benefits and values from e-business.

The combination of the analysis of the answers to the first and second research questions made it possible to confirm hypothesis H3 and H4, namely, the increase in the degree of use of Internet technologies increases the perceived value from own e-business (H3) and the high level of acceptance of new technological solutions positively affects the perceived values from starting own e-business (H4). This finally leads to the conclusion that the intention to start own e-business depends on the perceived value and level of acceptance of new technological solutions.

5.2. Practical Implications

The study conducted provides practical implications first and foremost for higher education institutions, namely for those responsible for shaping curricula, and directly for academics implementing these curricula.

First, educational programs at universities must include subjects aimed at improving digital skills, and all classes conducted must be oriented on the use of Internet technologies. Such an approach can benefit all students regardless of their field of study and year of study.

Second, in the course of teaching, it is crucial to emphasize the value provided by modern Internet technologies and the direct process of running one's own business including e-business. Accordingly, it is advisable at universities, regardless of their specialization, to shape and implement teaching programs aimed at disseminating the benefits of new technological solutions.

Third, it is crucial when shaping the curricula of higher education institutions to adapt specialized technological solutions to different fields of study. In such a way, the learning programs developed and implemented will raise the level of acceptance of new technological solutions in the student community and thus contribute to perceiving the value of starting one's own e-business.

6. Limitations and Future Research

The conducted study has some limitations. First of all, the study was conducted only at Polish universities. Therefore, subsequent studies may include students from other EU areas, i.e. countries with similar socio-economic conditions, a similar system of organization of higher education and a similar level of technological development. These studies can further confirm the results obtained or supplement them. On the other hand, the next stage may be research conducted in non-EU countries with a different economic system and a different way of organizing higher education. Such research will make it possible to distinguish the peculiarities of intentions to start one's own e-business in student communities operating under different technological conditions.

In addition, another study regarding the intentions of modern college students to start their own e-business could take into account behavioral factors, i.e. the behavioral styles of modern students, which affect both the level of acceptance of new technological solutions and the perceived value from their own e-business.

Structured in this way, future research can bring additional development in TAM and provide further practical implications not only for universities as educational institutions, but also directly for students as individuals shaping their future.

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