
The Impact of E-Commerce on Globalization Processes: Comparison of Poland and Turkey

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Abstract:

Purpose: The primary objective of this article is to identify the differences in the opinions concerning the impact of e-commerce on the broadly perceived globalization processes in two selected countries, Poland and Turkey, at the beginning of the Covid-19 pandemic. The two countries examined as part of the research are culturally distinct. However, they also represent a similar level of development in terms of Internet-based solutions.

Design/Methodology/Approach: In this study, the authors have applied a dedicated questionnaire, which enabled them to collect data covering the sample of 459 Polish and Turkish respondents. The survey findings were compared, considering the percentage differences, the city distance, and Euclidean distance. The research results were obtained using a survey questionnaire completed by individual, active Internet users from both countries. The structure of the paper includes the presentation of the issue against the background of literature, methodological assumptions of the study, its findings, discussions, and conclusions.

Findings: The research findings confirmed the existence of significant differences between Poland and Turkey as regards the respondents' perception of the place and role of e-commerce and their influence on globalization processes, in particular in the categories related to payments for products/services in e-commerce as well as the impact of information technologies on globalization.

Practical Implications: The discovered in the conducted research similarities and differences in the assessments of the impact of e-commerce on globalization processes in Poland and Turkey may enormously enhance the understanding of differences between described countries and give essential knowledge for developing the new product in the e-commerce area.

Originality/Value: The present study contributes to creating new knowledge concerning the similarities and differences in the assessments of the impact of e-commerce on globalization processes in Poland and Turkey.

Keywords: Electronic commerce, globalization processes, the impact of e-commerce on globalization.

JEL Code: M15, L81, L86, O33.

Paper Type: Research Paper.

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1. Introduction

The study's main objective is to identify the differences in the respondents' opinions on the impact of e-commerce on globalization processes occurring in Poland and Turkey. The authors have undertaken to compare the two countries due to the relative ease of obtaining comparable data from the Turkish university that collaborates with our institution and a similar level of e-commerce development in both countries. There is a common opinion, expressed in numerous publications, pointing to information technologies as the most significant factor contributing to globalization processes (Weisblat, 2019). Hence, if technological development is a decisive factor in Globalization, and e-commerce is regarded as its prevalent economic manifestation, then the question arises: what is the impact of e-commerce on globalization processes?

Moreover, it appears that the thirty years of the Internet's existence and a slightly shorter period of its use in e-commerce give rise to claims concerning considerable convergence of consumer behavior, which, in turn, leads to further strengthening of globalization trends. Taking all the above into consideration, the authors have formulated a thesis concerning marked similarity and convergence of the opinions on the place and role of information technologies (IT), e-commerce solutions, and their impact on the further development of Globalization in the countries which differ in terms of culture and geographical location.

From the perspective of management, information technologies can be seen as potential use of all means of information technology and related services, both traditional and Internet-based solutions, to build and use information systems in an organization (Slyter, 2012), (Definition of Information Technology (IT), n.d.). Considering the above, e-commerce constitutes an integral part of information technology, allowing the exchange of goods and services between customers on a global scale using the Internet and its infrastructure (Glossary: E-Commerce - Statistics Explained, n.d.), (What Is E-Commerce? n.d.). The global scale of operations assumes the gradual standardization, unification, and homogenization of technical and organizational means. Moreover, it points to the convergence of consumer needs, which are manifested as similar purchases or shared views on the possibility of using the technologies facilitating the movement of products and services, including financial services (WHO | Globalization, n.d.).

The relevant literature on this topic generally focuses on macroeconomic or statistical relations between Globalization and the development of e-commerce. There also appear numerous studies on the development of e-commerce or Globalization in individual countries. However, there are few publications comparing globalization phenomena occurring in different countries. It is important to note that there is also general awareness of the connection and interdependence of these phenomena. Undoubtedly, the development of the Internet, ICT, and e-commerce (both i-commerce and m-commerce) contributes to the acceleration of globalization processes.

However, few studies are examining the role of e-commerce in globalization processes from an individual user of B2C e-commerce solutions. Therefore, this work aims to fill the research gap in this area and the one related to international comparisons of respondents' opinions in this regard.

When analyzing the literature and available materials, it is essential to mention blogs, portals, vortals, encyclopedias, etc. which contain subject-related data. However, the content is usually fragmentary, selected at random, posted without careful prior consideration. Such publications are aimed at popularizing a particular field for interest-related or marketing purposes.

It can be concluded that the findings presented in this article constitute a new approach to the research problem because the data used in the analysis were collected as part of the authors' research examining the opinions of individual users functioning in their domestic markets in Poland and Turkey.

The article consists of five sections. After the introduction, the authors present a literature review related to the factors influencing globalization processes. The next part of the paper focuses on the research procedure, including the demographical data concerning the respondents and the justification of the selection of the research sample. The following section presents the analysis and discussion of the results obtained as part of the survey analysis. The work ends with conclusions resulting from the conducted research, identification of research limitations, and description of directions for further research.

2. Literature Review

Globalization is based on two foundations, e-commerce in the strictly economic sphere and broad changes in social communication, supporting economic and socio-cultural spheres. Initially, most publications concerning the impact of e-commerce on globalization focused on the opportunities related to the first aspect. They included the benefits that globalization brings to e-commerce, namely, reducing costs, increasing productivity, increasing customer participation and involvement in commerce, and greater personalization of services (Kraemer *et al.*, 2005).

Other literature sources also concentrate on the role of IT, in particular e-commerce, in globalization processes (Cansejo, 2020; Khalil, 2018). The publications also increasingly emphasize the role of B2C and B2B e-commerce in the abovementioned processes (Kakamanshadi and Totonchi, 2012). The subject-related sources published after 2010 also draw readers' attention to the social sphere of the discussed phenomena, emphasizing its role both in business and the globalization of social behavior (Aydm and Savrul, 2014).

Since 2013, research has focused not only on the Internet-based solutions accessed via traditional devices but also on online services available using mobile devices (Elite

Asia Marketing, 2020; Chmielarz, 2016). Recently, in the last twelve months, there appeared new articles emphasizing the role of e-commerce and the role of social factors in accelerating globalization processes during the COVID-19 pandemic (Mukhisa, 2020). This topic is considered from different perspectives, the impact of a pandemic on different industries (Hillen, 2021), its influence on SMEs (Anacleto *et al.*, 2020), marketing applications as well as the organizational and technological improvements supporting online sales (He *et al.*, 2021; Pantano *et al.*, 2020) as well as the risk analyzed from the point of view of international e-commerce and related globalization processes (Sharma *et al.*, 2020). At present, the issue dominates the contemporary literature on the subject (Chmielarz *et al.*, 2021). However, it seems that many other important topics are not covered as part of this new development.

Thus, this article is devoted to comparing assessments of e-commerce phenomena as a determinant of globalization in the cross-section of international comparisons of two countries, Poland and Turkey.

3. Methodology

The research was carried out using the CAWI (Computer Associated Web Interview) method based on the authors' own experience from previous research. The survey questionnaire, written in English, was developed to collect empirical data from Poland and Turkey. The English version has been translated into Polish and Turkish. Particular attention was paid to the translation process to avoid any potential inconsistencies and inaccuracies regarding the research categories applied in the study. The LimeSurvey tool was used to process the obtained results.

The research procedure consisted of the following stages:

- selecting the respondents for a pilot study and the sample for the research as well as its subsequent justification,
- constructing a prototype of a survey questionnaire concerning the impact of e-commerce on globalization processes as well as its verification on a randomly selected pilot sample of active e-commerce users,
- constructing the final form of the survey questionnaire, placing, and testing it on the servers of the University of Warsaw,
- conducting surveys among e-commerce users in the two selected countries, i.e., in Poland and Turkey, the countries representing similar levels of development of e-commerce; the subsequent analysis and discussion of results,
- calculating differentiation indicators (distances between both countries),
- drawing conclusions from the results obtained as part of the study.

The selection of the group of respondents was a case of convenient and purposeful sampling. It was a convenient sample because approaching groups of university students, requesting and asking them to complete a survey questionnaire on innovation

tends to be a highly successful venture. This group of respondents is eager to participate in studies, being aware that this experience will be helpful for them as future researchers responsible for conducting similar research projects. At the same time, it is an expert group (both in terms of age and interest in the subject) since the largest share of this population uses modern technologies in their everyday life, study, and work (at the Faculty of Management at the University of Warsaw, nearly 70% of students have jobs).

However, it is essential to note that the current excessive use of remote communication does not encourage students to use ICT solutions in their free time. In this case, the response rate regarding the pilot and final versions of the survey questionnaire did not exceed 90%. The students are also a group that includes individuals who tend to engage in online sales most frequently, though they usually make low-value purchases. As far as m-commerce is concerned, they are also keen to use free applications and games. Thus, it emerges that the population completed the survey with the most significant access to smartphones, tablets, laptops, and desktops.

These may not be the best devices in terms of quality, but a markedly longer lifespan characterizes them. In this context, the difference between traditional, browser-based e-commerce and m-commerce does not consider the devices that enable shopping in stores and the software used for such purposes. Thus, the differentiation focused on the one hand, access to websites through web browsers, and the other, using applications running on mobile devices. The study's underlying assumption was that if a study were conducted on a population of university students in two countries, these groups would share similar characteristics. However, the differences between the research samples representing both countries turned out to be significant.

The total number of respondents amounted to 459 individuals, including 240 (52% share) participants from Poland and 219 respondents (48% share) from Turkey. They constituted almost 69% of the total population invited to complete the survey. The survey was conducted in March / April 2020, at the beginning of the COVID-19 pandemic. Among the respondents in both countries, on average, there were 56% women and 44% men. In Poland, 63% of women and 37% of men answered the questionnaires; in Turkey - 49% of women and 51% of men completed the survey. Thus, the average difference amounted to nearly 14%. In Poland, most of the sample were women. This tendency results from the consistent ratio characterizing the studies at the faculties of economics and management, where women usually constitute 2/3 of all students. The opposite relationship may be observed in the case of technical and engineering studies.

The average age of the respondents was estimated at 21.6 years, with a median of 21 years. Like previous studies, this is the typical age for the group of BA and BSc students and for the first years of MA studies who were asked to complete the survey. More than 94% of the survey participants were representations of the groups aged 18-24, and nearly 6% belonged to the age group of 25-30 years. The difference in age

groups amounted to just over 5%, Polish students who took part in the study turned out to be slightly younger. On average, the respondents in both countries came from families with four people (33%) or more than five individuals (23%). There is a clear difference between respondents from Poland and Turkey in families of 5+ members (21%). The Turkish population included more than a 34% share of individuals, pointing to such a characteristic. In Poland, most people come from families consisting of four members (33%). In total, 2/3 of the respondents in Turkey come from families, including four or five individuals. In Turkey, there are 10% fewer people coming from two-member families than in Poland.

Significant differences in terms of the characteristics of the respondents occur in the category of education. In Poland, only 11% of respondents declared having a bachelor's degree, and in Turkey, the share included 91% of the respondents. Thus, the difference, in this case, amounts to 80%. The opposite relationship can be observed in the case of declarations concerning secondary and post-secondary education. In Poland, the share included 88% of respondents; in Turkey, the group constituted only slightly over 2% (the difference of 85%). The remaining levels and types of education (higher, vocational) were of marginal importance. The results show that in the survey in Turkey, the sample included mainly post-secondary students.

On average, over 52% of the survey participants indicated that they come from cities with over 400 thousand inhabitants, more than 15% from cities with 100-400 thousand citizens, nearly 14% of the sample came from villages, over 7% from towns with 25-49.99 thousand residents, over 6% from towns with 50-99.99 thousand inhabitants, and nearly 8% from towns below 25 thousand residents. There is a marked difference (over 18%) which occurs in the case of residence between the respondents from the two countries in the category of cities with over 400 thousand inhabitants. In Poland, the group includes a 61% share, and in Turkey 42% (the difference of 19%). Another difference may be observed in the category of cities with 100-400 thousand residents: in Poland, the share is 5%, in Turkey, it amounts to 25% (the difference of 18%). The latter is related to the regionalization and geographical location of the study. In Poland, the central location of the University of Warsaw determines the demographic characteristic of the sample, and the University of Uşak is located a little further from the main municipal areas in Turkey.

As far as assessing students' financial situation is concerned, most students (50% on average) perceive their own and their family's situation as average (sufficient funds to meet daily expenses, but they need to save money to make higher-value purchases), a 34% share consider their financial situation to be good (they can afford many things without a particular need to save money). The most significant difference between the respondents from both countries occurred in the case of this category. The difference amounted to 38% in Poland, the indications were established at 52%, in Turkey at 14%. A nearly reverse relation occurred in the category of average financial situation: the advantage of Turkish respondents in the case of this category amounted to 29%. The categories related to assessments indicating a terrible situation (insufficient funds

to meet even basic needs) and a rather dire situation (I have to be very economical daily) were characterized by similar significant differences. Among Turkish respondents, over 18% of survey participants rated the situation of their families in these terms, while in Poland, none of the respondents used these particular categories to describe their circumstances or the circumstances of their family in such a way. Conversely, in the category of a perfect financial situation (I can afford everything I need) in Poland - there were 12% of the respondents, and in Turkey, the share amounted to less than 4%. This generally indicates a better financial situation for the families of Polish students.

Generally-speaking, despite the broadly similar environment of the respondents, as indicated in some categories, significant differences were resulting from economic, demographic, and cultural conditions. The simple and transparent form of the survey questionnaire did not cause many difficulties when providing the answers, and some of the students (31) decided to expand their responses using additional fields (e.g., the questions concerning the additional forms of mobile payments they use).

The Cronbach's alpha coefficient was applied for the reliability analysis. In all analyzed questions, Cronbach's alpha coefficient indicates the internal consistency and reliability of the sample (Hinton, Brownlow, McMurray, and Cozens, 2004). The internal consistency measure of the 24 dependent variables for the two compared countries, which was based on Cronbach's coefficient alpha, amounted to 0.76 (and 0.74 for Cronbach's alpha calculated based on standardized items), for a total of 48 items. The distances were calculated as the absolute distance of the individual sub-criteria within the criteria groups and the city distance (City) and the Euclidean distance. Additionally, the authors formulated the H0 hypothesis about the lack of differences between Poland and Turkey in the values regarding individual criteria, groups of analyzed criteria, and the entire study's evaluation against the H1 hypothesis concerning the existence of differences, with the assumed probability of 0.05.

To prove this hypothesis, the significance level of α was calculated for the probability distribution of the Fisher-Snedecor inverse (right-hand) value. It can be used in the Fisher-Snedecor test to compare the degree of variability of two data sets for two populations (including the study of the distribution of the assessment of differences in opinions on the impact of e-commerce on globalization between Poland and Turkey) and to compare it with the p-value determined based on test statistics. If $p \leq \alpha$, then we reject H0 and adopt H1; if $p \geq \alpha$, we reject H 0 and take H1. The critical value of p for this distribution amounts to 1.71.

4. Results and Discussion

The verified online survey consisted of twenty-five substantive questions and demographic data describing the study sample. Below we will discuss and analyze the most relevant answers obtained.

The first the substantive, essential question in the survey questionnaire concerned the respondents' assessment of the impact of information technologies on the phenomenon of globalization. On average, the decisive and robust influence was indicated by 88% of the respondents. The most significant difference occurred in the category of decisive influence; namely, 40% of respondents in Poland supported this response, and 24% fewer respondents in Turkey expressed this view. Another critical difference amounting to 15% appeared in the case of medium impact, where the opinion of Turkish students prevailed.

There are no similar differences in the opinions concerning the indicated rationale behind the influence of information technologies on the globalization process. The differences here do not exceed 8%. The most significant number of positive opinions (22% on average) was recorded in the case of differentiated and diverse access to the flow of goods and services achieved thanks to the creation and use of e-commerce (both website-based and mobile solutions) and enabling access to global markets offering different prices and selection of products and services (15% on average). These two reasons were seen as the most critical factors: in Turkey, this opinion was expressed by 42% of the respondents, in Poland, the share amounted to 32%. In Poland, the indication associated with using the same platforms and electronic channels to popularize uniform cultural patterns took second place in the ranking (15%), and in the case of Turkey, the opinion related to the convergence of hardware and software used in every aspect of economic activity took the third position in the ranking (16%). The most negligible weight (an average of 9%) was attached to the increasing popularity of global languages or disseminating uniform knowledge standards.

Detailed information concerning the impact of e-commerce on the globalization process was included in the next question of the survey. From the broad spectrum of possibilities presented to them, the respondents selected the factors related to expanding the selection of goods and services to include those products that were unavailable in their country. This response was indicated by 21% of the survey participants. Increasing the possibility of choosing products and services (both domestic and foreign) at the best price constituted, on average, 17% of responses. The third place was taken by the possibility of purchasing and delivering the products to countries covered by the Internet - almost 17% of indications on average. The worst scores in this ranking related to the desire to learn more about the consumption habits of other countries - 3% or providing the possibility of choosing suppliers with the closest location (also from abroad), which affects the price of delivery (4%). A considerable spread (amounting to 17%) between the responses to claims contained in the questionnaire.

The most significant differences between the two countries appeared in the categories with the largest share of respondents: 6% in favor of the Polish respondents in terms of the number of opinions related to the greater accessibility of goods and services not available in the country and 5% associated with the possibility of the sales of products

and services to the countries covered by the Internet services. Such features obtained more than 10% of opinions about the possibility of comparing prices and characteristics of goods and services at home and abroad and increasing the possibility of choosing goods and services of the best quality (both domestic and foreign products).

The following two questions related to restrictions and limitations related to international e-commerce. Among the options, the authors listed six possible obstacles that may occur in international e-commerce. The list encompasses the following factors: economic, organizational, legal, technological, cultural, and security barriers. When asked which of them exist, the highest share of respondents (20% average) stated that the most significant barriers are related to the security of electronic transactions. Furthermore, other common obstacles include legal and economic barriers (18%). Polish respondents pay more attention to legal barriers a 4% difference, respondents from Turkey tend to focus on technological aspects 7% of the difference. The above comments are further specified using the question related to those barriers that appear to be most significant for the survey participants. All in all, it turned out that the most frequently observed barriers are also the most significant obstacles perceived from the point of view of international e-commerce users. The respondents' assessments were security barriers 39%, economic barriers 22%, legal barriers 16%.

The recognition of the remaining barriers as the most critical obstacles ranges from 4% (organizational) to 7% (technological) indications. Again, the most significant differences (5% in favor of Turkish respondents) were observed in economic and technological barriers. So, what is the biggest obstacle in purchasing products/services of foreign origin using e-commerce? In Poland, the barriers include the high price of a product/service combined in the case of a product with a high price of delivery, especially from a foreign country (16%), no sense of security in the case of using foreign websites and doubts regarding filing complaints (15%) local regulations imposing customs duties or other preferences for domestic products/services (14%).

In Turkey, instead of the lack of security related to using foreign websites and advertising, there appeared limited access to the Internet (problems related to localization or legal factors) or technical limitations of telecommunications network operators (10%). The first three positions amount to 45% in Poland and 35% in Turkey. The most significant differences appeared in the case of less visible or less acute concerns related to security in the case of Turkish respondents (9%), no knowledge of foreign languages (or lack of skills related to using translators), limited Internet access (related to the location or legal considerations) or technical limitations on the part of telecommunications network operators - 6% each, as indicated by Turkish respondents. On the other hand, social reasons such as:

- cultural preferences when conducting international, traditional direct (face2face) commerce 4%,

- cultural differences resulting from a different design of foreign websites (different color codes, communication patterns, a different arrangement of website elements) 4%,
- no habit or familiarity with using internet tools 2%,
- reluctance to use modern technologies in e-commerce, especially in products/services of foreign origin 2% were seen as less significant.

Questions regarding foreign purchases on the Internet-enabled the authors to conduct a specific verification of the previous statements. In Poland (42%) and Turkey (36%), e-commerce users rarely make foreign purchases online. However, at the same time, 46% of customers in Poland and 39% of customers in Turkey indicate that they make such purchases often and sometimes. Less than 6% of the population (on average; 9% in Poland, 3% in Turkey) make foreign purchases very often, and as many as 15% of Turkish students (4% in Poland) never make such purchases on the Internet.

Information on foreign goods/services available online is obtained using mainly three sources: manufacturer's websites (28% on average), online shops (27% on average), forums, and social media (26% on average). In all these three categories, there are considerable differences between Poland and Turkey. The first significant difference is related to the ranking order: in Poland, 35% indicate forums and portals, 23% point to shop websites, 21% mention producer websites. In Turkey, the order is quite the reverse, with only 16% of survey participants referring to websites and social networking sites in Turkey (35% in Poland) as the source of information. The latter constitutes the most significant difference between the analyzed countries. The traditional sources of information such as newspapers and magazines, including specialized and trade magazines, TV and radio commercials or programs, and friends and relatives, are used to a minimum degree (the total of 8%). Internet advertising does not enjoy a particular reputation (on average, 12% of respondents use such sources).

After obtaining the information, respondents generally use comparison engines (36% on average), check the information about the product/service on the Internet and try to purchase it online (27%), check the information about the product/service on the Internet, together with the information where it can be purchased in a physical location, and their purchasing decision is postponed until a visit to a brick-and-mortar shop or an outlet (26%). A 10% smaller share of Turkish respondents check information about the product online in the latter case. After obtaining the information available online, 13% of them visit a shop/specialist outlet and try to get the latest information about a product/service, and then buy the goods using their services (only 2% in Poland.) Showrooms are not very popular in both countries (on average, they are indicated only by 4% of the respondents).

Survey participants generally recognize that goods are produced abroad based on the Made in... label (44% on average), the awareness of the name of a brand or product (26% on average), and information related to the address of the manufacturer or

distributor (14%). While respondents seem to agree as to the first attribute, in the second case, there appears a difference of 7% in favor of the respondents from Turkey, and in the third case - 14% in favor of the respondents from Poland. Nearly 9% of e-commerce users from Turkey recognize foreign goods according to the barcode (in Poland, less than 4%).

The main factors which have a decisive influence on the purchases of products in international e-commerce are as follows: the appropriate price-quality ratio (12% of responses), the reputation or prestige of the brand (11%), and opinions expressed in social media, blogs, discussion forums, etc., (10%). In the case of both analyzed countries, the situation is somewhat different. In Poland, the first three positions were taken by: the reputation or prestige of the brand (13%), opinions expressed in social media, blogs, discussion forums, etc., (11%), as well as opinions and recommendations offered by the family based on their experiences or opinions of friends from abroad (10%).

In Turkey, they included the appropriate price-quality ratio (18%), the perceived and confirmed high quality of the goods of foreign origin (9%), as well as the price, including transport and payment or transaction-related costs (9%). The most significant difference occurred in the case of the responses concerning the optimal price-quality ratio (10%) and the opinions expressed by family members or posted on social media (6% each). Analyzing the above findings, one may conclude that, from an economic point of view, the respondents from Turkey approach foreign purchases more rationally than their counterparts in Poland. An exciting aspect of the findings is that the respondents largely ignored (2-3% of the responses) the information related to advertising posted on the manufacturer's website or the advertisements presented in traditional media. The only aspects which gained recognition (the indications estimated at the level of 7%) included the promotion, taking into account the prices of similar domestic goods, transport costs, and, for example, payment or transaction-related costs. Certificates (4%), the terms of use such as returns and guarantees (4%), production location (4%), or short delivery times (3%) do not change these opinions either.

The next question concerned selecting items purchased in international e-commerce via a computer (PC or desktop computer). The first positions are occupied by clothing and footwear (28% on average) and home electronics and household appliances (14% on average). However, there is a 5% difference in the third position in the ranking, where only 8% of Turkish respondents admit buying cosmetics using e-commerce. In Turkey, more presents and gifts and computer software and accessories (11% each) are purchased using a computer, and the same population tends to buy fewer computer games using this method. Polish students also order and buy a 4% smaller share of food products from abroad. In the comments, the respondents added some items to the list they were presented with. They included jewelry, shooting accessories, musical instruments, and watches.

Similar opinions were obtained concerning the assortment of items purchased in international e-commerce via smartphones (tablet, phablet). It turned out that in the case of international trade, the distribution of purchases is quite like that of purchases made via a desktop computer. In the previous research on e-commerce in Poland (Chmielarz *et al.*, 2020), there occurred a significant difference - high-value goods were purchased using a computer (i-commerce), low-value products - using an application running on a smartphone (m-commerce). In international trade, the category of clothing and footwear also came first in the ranking related to Poland and Turkey (19% of responses on average), and cosmetics came second (an average value of 13%: 16% in Poland, 11 in Turkey, a difference amounting to over 5%). The following positions included: home electronics and household appliances, books, gifts, and presents, ranging from 9 to 11%. In Turkey, a noticeable difference could be observed in software and IT accessories (10%; a difference estimated at over 5%). Articles for animals and garden supplies are mentioned in the comments on additional purchases.

The question concerning the range of services purchased using a computer and a smartphone was a natural consequence of the study. In the first sphere, there occurred significant differences between the two countries. In Poland, the three first positions include aviation services (22%), tickets for cultural and other events (16%), and tourist services (14%). In Turkey these were banking services 19%, transport services (taxi, train tickets), 18% and telecommunication services 13%. The most significant differences over 9% were indicated about plane tickets (the advantage of Polish respondents), transport services a 9% advantage of Turkish respondents and a 5% bigger share of Turkish survey participants in the case of international banking services. The categories which appeared to be the least popular purchases included foreign insurance and medical services 4% on average.

A similar situation as the one presented above occurred in the case of the assessment of international operations carried out using mobile devices. In Poland, the top three indications once more include aviation services (14%), cultural services (15%), as well as transport services (18%). In Turkey, these are banking (19%), transport (18%), and telecommunications (13%) services. The most significant differences reaching the level of 5% appeared in the category of international catering services (in favor of Polish respondents) and the case of banking services with a 5% advantage of respondents from Turkey. Again, the least essential services appear to be those related to international insurance (3% on average) and medical services (4% on average).

During the last six months, Turkish respondents bought mainly clothes and shoes (26%), like Poland's survey participants (24%). In Poland, transport (air, rail, and bus tickets) took the second position in the ranking, and the score amounted to 15%, while in Turkey it was established at the level of 14%. In Turkey, the categories of books, films, and music, assessed at 18%, took second place in the ranking, while in Poland, these items were indicated as the category holding third place. In this category, the difference reached 5%. The most significant difference in international purchases over

the Internet, which was assessed at nearly 9%, occurred about the tickets for cultural or sports events (cinema, theatre, match, etc.). 13% of respondents in Poland and 8% in Turkey decided to make such a purchase in the last six months. Tourist trips were the least popular purchase (3% on average), probably due to the COVID-19 pandemic, and IT equipment and accessories were a category that obtained a score of 5%.

A vital characteristic differentiating the impact of e-commerce on globalization was using the payment method in international online purchases. Undoubtedly, the common feature of these payments was the payment by card (44% on average), although there were also differences reaching nearly 8% (the respondents indicated this tendency more frequently in Turkey). This dominance related to using a credit card may result from the payment checkouts in online shops, which is very often the only acceptable form of payment. In Poland, the share of transfers is slightly lower (40% transfers, 41% cards), i.e., the most secure, fast, and reliable methods. In Poland, cash payment methods (prepayment, payment after purchase - if possible) are also considered safe, and for this reason, 13% of respondents use this form of payment. Various forms of electronic money are popular in Turkey (15% of respondents). The respondents added Blik (a form of mobile payment available in Poland) and PayPal as popular payment methods in the comments. The most significant differences, reaching as much as 31%, occurred in the case of the category of transfers and use of electronic money (10%). The difference of 10% also occurred in downloading only free goods or services (11% in Turkey, 1% in Poland).

The results were analyzed based on the differences between the results obtained during the studies carried out in Poland and Turkey in 2020. The indicators have been supplemented with the indicators of the Euclidean distance and the city distance (City). Indicators calculated for the most relevant questions contained in the survey questionnaire are presented in Table 1.

Table 1. *Indicators of the Euclidean distance and city distance between the results from the surveys conducted with the participation of Polish and Turkish respondents in 2020.*

No.	Distance indicators	City distance	Euclidean distance	Fisher-Snedecor test (inverse)
1.	The reliability of opinions concerning users of international e-commerce	51.68 %	6.11%	3.86
2.	Types of foreign goods/services which you would not buy using traditional devices (PC, desktop computer)	36.20 %	1.88%	2.64
3.	The degree of difficulty in the case of purchasing goods/services of foreign origin	63.45 %	7.61%	2.60
4.	Type of reaction after obtaining information about foreign goods/services from any source	31.32 %	2.61%	2.32

No	Distance indicators	City distance	Euclidean distance	Fisher-Snedecor test (inverse)
5.	Main obstacles in purchasing foreign goods/services using e-commerce solutions	47.89 %	2.44%	1.79
6.	The strength of the impact of e-commerce on globalization	28.26 %	2.64%	1.62
7.	The frequency of making purchases of goods/services of foreign origin on the Internet	33.76 %	2.45%	1.53
8.	Types of foreign products/services purchased as part of m-commerce (a smartphone, tablet, phablet)	22.91 %	0.82%	1.45
9.	Types of payment used in e-commerce transactions for the purchase of foreign products/services	62.44 %	12.55%	1.39
10.	Type of foreign services purchased by a computer (PC, desktop computer)	37.45 %	2.37%	1.24
11.	The strength of IT influence on globalization	47.20 %	8.14%	1.14
12.	Characteristic features distinguishing products of foreign origin	32.48 %	2.85%	1.09
13.	What kind of foreign services do you use online via your smartphone (tablet, phablet)?	22.83 %	0.87%	1.08
14.	The significance of barriers to international e-commerce	11.04 %	0.24%	1.05
15.	Types of products of foreign origin purchased via a computer (PC, desktop computer)	21.98 %	0.62%	1.03
16.	Premises/Rationale of the greatest influence of e-commerce on the phenomenon of globalization	19.35 %	0.74%	0.98
17.	Types of barriers to the development of international e-commerce	21.23 %	0.95%	0.93
18.	Advantages of information technologies in the process of globalization	27.80 %	1.37%	0.90
19.	Source of information about foreign products/services available on the web	54.05 %	6.52%	0.89
20.	Respondents' evaluation of the best definition that reflects the essence of the globalization phenomenon	29.09 %	1.92%	0.87
21.	Reasons for purchasing products/services of foreign origin instead of domestic ones	42.84 %	2.18%	0.79
22.	Types of foreign goods/services purchased recently via a smartphones (tablet, phablet)	30.10 %	1.47%	0.72
23.	Disadvantages of information technologies in globalization processes	12.78 %	0.46%	0.59
24.	The manifestations of the impact of IT on globalization	47.29 %	3.00%	0.13

Source: Own work.

5. Conclusions

The above analysis and discussion of the findings lead to the following general conclusions:

- the most significant differences between opinions on the place and role of information technologies, mainly e-commerce, in globalization processes occurred in the assessments of payments used on the Internet. One may note a significant difference between the dominance of transfers in Poland and various forms of electronic money in Turkey. This differentiation is confirmed by the highest degree of the Euclidean distance index,
- a similar, considerable distance is shown by the indicator of the strength of the impact of information technologies on globalization, where Polish respondents considered it decisive in 40%, and in the case of Turkish respondents, the share was 16% smaller, the reverse relation occurred in the case of "medium impact" category,
- the respondents in Turkey, unlike those surveyed in Poland, also indicated considerable difficulties as regards buying products/services of foreign origin, associated with the difficulties obtaining reliable information about foreign products/services online,
- most minor differences (Euclidean index amounting to 0.24%) occurred in the category of the significance of barriers to international e-commerce - here, the opinions of respondents from both countries were very similar,
- the observation of the indicators also shows that there are significant similarities in terms of products and services purchased from abroad in Poland and Turkey, which may be interpreted as the indirect confirmation of the progressing globalization processes,
- the critical value of the Fisher-Snedecor test =1.71 was exceeded in 5 out of 24 cases, so the thesis about significant differences between opinions concerning the impact of e-commerce on globalization was confirmed in only less than 21%. Nearly 80% of opinions, in this case, did not indicate any significant differences, but on the contrary, indicated far-reaching similarities. This unification of views in culturally different and geographically distant countries may be a specific indication and evidence of the progressing globalization processes.

As mentioned earlier in the present study, the primary limitation of this study was the selection of the research sample, which does not allow the authors to generalize the conclusions to include the entire population. To obtain a fuller and more comprehensive picture of the situation, it would be necessary to increase the number of respondents considered in the study as well as to expand the sample to include individuals representing different demographic characteristics since the present research was limited to students at prominent universities in Poland and Turkey. Due to the Covid-19 coronavirus pandemic spread, views on the place and role of e-

commerce in globalization processes may have changed. Therefore, these studies should be repeated, and the differences re-examined shortly.

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