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## PAYMENTS IN E-COMMERCE LOGISTICS

*Abstract:* The article presents the e-commerce market and the payments made in this market. The purpose of the analysis is to examine the types of payments in the e-commerce market by individual customers (B2C). Research methods that have been used: analysis of literature in a given subject, diagnostic survey using the questionnaire technique, observation, comparative analysis. The majority of participants (39%) said they prefer payment by Blik-mobile payment system, followed by payment by card (18%), quick transfer (16%), apple pay (15%), and PayU (7%). The payments presented in the research have been compared with 2017 and 2019 figures.

### Introduction

Logistics is often a differentiator and competitive advantage in e-tailing companies. E-tailing has evolved through the offering of more standardized products, wider product varieties, fulfillment quality, preferred delivery time slots, order accuracy, free shipping, discounts, cash-on-delivery payment option, easy return and exchange policies<sup>1</sup>. Timely payment is necessary for the efficient delivery of goods and services to all entities in the supply chain. Traditionally, there has been a lot of manual processes related to payment. Nowadays the technology advancements make the payment process in electronic form. Even the electronic form is not easily accessible to all parties in the supply chain. E-commerce is a relatively new phenomenon, and while it is the same as trade conducted in a computer network for centuries, its growth and modes of operation are very dynamic. Various factors determining the strength and extent of its

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<sup>1</sup> D.H. Nguyen, S. de Leeuw, W. Dullaert, B.P. Foubert, 2019. *What is the right delivery option for you? Consumer preferences for delivery attributes in online retailing*. Journal Business Logistics 2019; C.S. Tang, L.P. Veelenturf, *The Strategic Role of Logistics in the Industry 4.0 Era*. In: Transportation Research Part E: Logistics and Transportation Review, vol. 129. Elsevier, 2019, pp. 1-11.

development have become apparent in less than fifteen years. Internet platforms for electronic sales have evolved, logistics efficiency has increased, influencing customer delivery speed, payment systems have expanded, and the market for mobile devices has developed, and consumer groups have been joined by a younger generation of citizens who are much more open to new information technologies. All of these factors began to have a significant impact on traditional sales channels while also affecting e-commerce.

The purpose of the analysis is to examine the types of payments in the e-commerce market by individual customers (B2C). Research methods that have been used: analysis of literature in a given subject, diagnostic survey using the questionnaire technique, observation, comparative analysis.

## **E-commerce market**

Electronic business (e-business) is described as the use of the Internet to construct networks and facilitate management, e-commerce, communication, and collaboration with consumers, suppliers, and other stakeholders both inside and outside the organization. The origins of electronic commerce may be traced back to the advancement of digital technology, which is a branch of science and engineering concerned with the design and implementation of digital and computer technologies, processes, and systems. Digital convergence expands client services while also opening up new commercial options. E-commerce is intimately tied to the Internet in today's context, however the use of electronics in business (telephone, fax, modems transferring data over the telephone network) is much older. Modems enabled the development of the first solutions for electronic commerce, which date all the way back to the 1960s<sup>2</sup>.

The emergence of e-business technology has resulted in the creation of the world website (web, WWW, World Wide Web), which is regarded as a critical aspect in the development of business because it has enabled many millions of individuals to access Internet resources (inter-network). The Internet, often known as a network of networks, is a global system of computer connections. The Internet has opened up new channels of contact and is an excellent tool for exchanging information. It provides possibilities to grow markets, new ideas for improving goods and services, and new ways to gain a competitive advantage and increase revenue. It eliminates geographical barriers, hence broadening the area of competition. The expansion of the network of browsers and search engines has made it easier to navigate the Internet, allowing for constant and direct

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<sup>2</sup> BestShoppingCartReviews.com, *History of Ecommerce*, <http://www.bestshoppingcartreviews.com/content/history-of-ecommerce.html>, (accessed: 08.04.2022).

engagement with Internet users. The commercialization of the Internet allows entrepreneurs to establish a variety of business systems that appeal to a wide range of customers<sup>3</sup>. While the Internet dominates e-commerce today, it is not the only data transmission network utilized for this purpose and never has been. B2B transactions were conducted through X.25 networks (dating all the way back to the mid-1970s), Frame Relay networks (dating all the way back to the late 1980s), and ATM networks (dating all the way back to the mid-1990s). Even today, operators maintain Frame Relay or ATM infrastructure, however it is mostly used to transmit Internet data.

Various definitions exist for the term "e-commerce":

1. refers to the selling and buying of goods and services over the Internet, e-commerce should be defined as any electronic transaction between an organization and a third party<sup>4</sup>,
2. is the act of purchasing, selling, and exchanging goods, services, or information using computer networks<sup>5</sup>,
3. e-commerce can be defined as business ventures focused on single electronic transactions for which networks serve as a channel for the exchange of information, services, and goods, as well as the relationship of the business with its own market environment<sup>6</sup>.

All of the definitions above have one thing in common: they all refer to the sale and purchase of goods and services over the Internet. All electronic transactions between an organization and a third party should be classified as e-commerce (electronic commerce)<sup>7</sup>.

In e-commerce, where competition is fierce and customer preferences are fluid, it is critical for businesses to segment customers and effectively target marketing actions. Segmentation and targeting are effective when customers belonging to the same segment exhibit similar behavior and responses to marketing campaigns. However, the connection between segmentation and targeting is frequently overlooked. Recently, several research contributions addressed this issue by proposing approaches for developing customer behavior models for each segment. Customers' behavior, on the other hand, can vary depending on the context, as is the case with many e-commerce business

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<sup>3</sup> D. Chaffey, *Digital Business and E-commerce Management*, WN PWN, Warszawa 2016, p. 12.

<sup>4</sup> D. Chaffey, *op.cit.*, p. 12.

<sup>5</sup> M. Feldy, *Sklepy internetowe*, Wolters Kluwer Polska Sp. Z o.o, Warszawa 2012, s. 17.

<sup>6</sup> M. Brzozowska-Woś, *Kierunki rozwoju handlu elektronicznego*, (in:) *Przedsiębiorstwo we współczesnej gospodarce – teoria i praktyka*, Politechnika Gdańska, Gdańsk 2014, s. 5-15.

<sup>7</sup> D. Chaffey, *op.cit.*, p. 12.

applications. In these instances, developing contextual behavioral models would improve predictive performance and, consequently, targeting. However, the issue of incorporating context into a segmentation model and consistently building predictive behavior models for each segment remains an open one.

Today's marketing professionals face increasing pressure to keep their businesses competitive as the business environment undergoes significant changes. On the one hand, globalization, advancements in information and communication technology (ICT), increased competition, and market fragmentation have compelled businesses to rethink their marketing strategies and processes. This is particularly true on the web, where terabytes of data are made available daily and search costs are low, making competition "a mouse click away"<sup>8</sup>. The so-called single customer view, or associating data from each purchasing channel with a specific customer-customer image, is today's challenge for the e-commerce industry.

The customer image is important from the store's perspective because it allows for much better recognition of the customer and his purchase history, as well as adjusting the offer to his needs, which translates into greater customer loyalty and higher profits for the seller<sup>9</sup>.

The most successful e-commerce companies understand the importance of responding to the changing needs of consumers and markets. Allegro is Poland's largest sales site and sales platform. We can buy almost anything on this platform; it is a simple and easy way to shop. Amazon and Alibaba are the world's largest marketplaces. eBay is another example of such a platform. Because of the large number of these large stores, the sales market is now shaped by large sales platforms rather than individual online stores. Buyers' primary source of purchasing products is these massive stores. We are looking for products in the marketplace more than ever before, which is why their characteristics will be presented below.

Allegro website was established in 1999. Initially, it was only a service for garage sales and selling items at auctions, today it mainly offers professional sales<sup>10</sup>. Allegro.pl had already accumulated seventy thousand users and 150 thousand products for sale by the end of 2000. Five years later, the site had fewer than four times the number of buyers and dealers. Currently, the website controls

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<sup>8</sup> T. Jiang, A. Tuzhilin, *Improving personalization solutions through optimal segmentation of customer bases*. *IEEE Transactions on Knowledge and Data Engineering*, 2009, pp. 305-320.

<sup>9</sup> M. Le Thi, Liaw, Shu-Yi., *Effects of Pros and Cons of Applying Big Data Analytics to Consumers' Responses in an E-Commerce Context*. *Sustainability* 9, no 5, 2017, p. 798.

<sup>10</sup> M. Smużniak, M. Bienias, *E-commerce na platformach ofertowych Allegro, eBay, Amazon*, Wyd. Helion, Polska 2019, s. 17.

about 90% of auctions on the entire internet market in Poland, and its success is the consequence of a number of factors, including the website's initial existence on the online market.

Allegro.pl is one of the internet businesses that has evolved into a model for merging the characteristics of traditional and online business models. This fact complicates the classification of firms between those that operate outside the Internet and employ traditional business models and e-projects that employ business methods more commonly associated with Internet endeavors.

Allegro.pl enables users to buy and sell a variety of different types of products and services without assuming ownership of the objects given by sellers, and is rapidly growing in popularity as a platform for users to offer their expertise and skills, as well as a variety of services. As a creator, the website uses outsourcing services from other companies, including<sup>11</sup>:

- transfer and storage of information resources;
- handling internet payments;
- providing services in the marketing of search engines;
- effective solutions in the field of interactive marketing and experiences;
- preparing and conducting advertising campaigns in the media traditional, Internet and mobile phones;
- organization of a security system for online transactions made on the website;
- organization and preparation of nationwide events.

Additionally, Allegro.eu completed its initial public offering of its shares, which resulted in the company's shares debuting on the WSE on October 12, 2020. This was Poland's largest-ever initial public offering, with an implied market value of PLN 44 billion and a subscription price of PLN 43.00 per share. Allegro.eu completed the year as Poland's largest publicly traded firm by market value<sup>12</sup>.

Ebay was founded on September 3, 1995, and is now one of the world's largest marketplaces. It was created by Pierre Omidyar, an American entrepreneur of Iranian ancestry.

The origins of eBay were essentially dependent on the enormous trust of the public, as money was transported across the country and the site lacked

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<sup>11</sup> N. Stepnicka, *Business models and e-business models in the Digital Economy. The use of the traditional business models in the online enterprise on the example Allegro.pl*, *Przedsiębiorczość i Zarządzanie*, Wyd. SAN, 2486 Tom XIV, Zeszyt 12, Część II, Kielce 2013, p. 225-234.

<sup>12</sup> Allegro, *Skonsolidowany raport roczny grupy Allegro.eu, za rok zakończony 31 grudnia 2020, 2021*, s. 42, <https://about.allegro.eu/static-files/39ad8578-b042-4efd-a242-fa556f742a02> (accessed: 28.05.2022).

a feedback system. In 1996, in response to a number of frauds, a feedback system was implemented to learn more about customers and sellers and their transactions.

A year after the platform's introduction, customers purchased and sold things worth a total of \$7.2 million. Ebay had 41 workers, over 300,000 registered users, and \$95 million in revenue. eBay currently employs around 15,000 people, generates \$8.98 billion in revenue, and earns a profit of \$7 billion (data for 2016)<sup>13</sup>.

Back in 1994, Jeff Bezos, a former Wall Street hedge fund executive and visionary who recognized the potential of the internet and e-commerce platforms, took the first step toward creating a "online everything store" – Amazon. At the end of the year, there were 1 million accounts and \$148 million in revenue (which grew to \$610 million the following year). The company quickly grew and began selling music, videos, electronics, video games, software, housewares, toys, games, and other products. Furthermore, what drew customers in were its personalized recommendation tools and customer reviews, which helped to build a consumer community. Amazon allowed small businesses and individuals to sell their goods through the platform in 2000.

Amazon's primary activities revolve around the creation, maintenance, and expansion of its massive platform. As a result, the brand invests in website and app development and management, supply chain management, storage and logistics, information security across all platforms (including e-commerce, streaming, cloud computing, and so on), film, series, and other products for its video platform, and marketing for all of its products and services. ("Operating model canvas amazon"). In 2015, AmazonSupply was replaced by Amazon Business, the company's dedicated channel for supporting small businesses. Companies can open a store, control pricing and fulfillment, and reach out to customers in a variety of ways. Amazon's B2B channel is effective in a wide range of industries, including construction, automotive, retail, and information technology.

It is not sufficient to access commercial data and deliver papers in order to provide comprehensive e-commerce services. There is a demand for online transaction security procedures and payment solutions for online purchases. As a result, between 1994 and 1995, the first firms offering electronic payment services began to emerge, such as First Virtual in 1994<sup>14</sup> and CyberCash in

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<sup>13</sup> M. Smużniak, M. Bienias, *op. cit.*, s. 81-82.

<sup>14</sup> S.N. Borenstein, J. Ferguson, J. Hall, C. Lowery, R. Mintz, D. New, B. Parenti, M. Rose, E. Stefferud, L. Stein, C. Storm, E. Vielmetti, M. Weiser, P.R. Wolff, *The Lessons of First Virtual's First Year*, Austin: Frontiers in Electronic Commerce, 1996,

1995<sup>15</sup>. Additionally, in 1995, the United States witnessed the birth of the world's first Internet bank, Security First Network Bank<sup>16</sup>.

At the time, electronic money transfer technologies enabled mutual fund transactions<sup>17</sup>. There are numerous similar systems in operation today, which serve a variety of functions, including bank-to-bank transfers, customer-initiated deposits, and card-based transfers. The impact of online payments on e-commerce is best demonstrated by the history of eBay, which has grown to become one of the most popular and largest worldwide online sales platforms operating in the consumer to consumer and business to business segments, with 155 million active buyers in 2014<sup>18</sup>. Another element influencing the growth of e-commerce was the introduction of quick electronic payments, the most prominent of which was the PayPal service, which was founded in 1999<sup>19</sup>. PayPal's popularity as a method of payment for online purchases grew to such an extent that eBay acquired PayPal in 2002. Other trading platforms<sup>20</sup>, as well as banks and clearing houses, recognized the potential of online payment services, resulting in the virtualization of other financial services.

## Methodology

A diagnostic survey was conducted among customers of e-commerce platforms between May and June 2022. 103 participants (n=103) responded to the questions, however 3 surveys were rejected due to incomplete response in 3 items. The survey was conducted using the CAWI (or Computer Assisted Web Interview) method of computer-assisted qualitative research – snowball

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<http://web.archive.org/web/19961104175714/http://www.fv.com/pubdocs/fv-austin.txt>, (accessed: 20.04.2022).

<sup>15</sup> K. Lamond, *Credit Card Transactions: Real World and Online*, 1996, <http://www.virtualschool.edu/mon/ElectronicProperty/klamond/Cyberpmt.htm> (accessed: 20.04.2022).

<sup>16</sup> B.B. Christopher, *FDIC Banking Review, Federal Deposit Insurance Corporation*, 1996, Vol. 8 No. 3 Article III. <https://www.fdic.gov/bank/analytical/banking/1995summ/art> (accessed: 03.05.2022).

<sup>17</sup> Ecommerce-Land.com, *History of Ecommerce*, 2014, [http://www.ecommerce-land.com/history\\_ecommerce.html](http://www.ecommerce-land.com/history_ecommerce.html) (accessed: 20.04.2022).

<sup>18</sup> eBay Inc., *eBay Inc. Reports Fourth Quarter and Full Year Result*, 2015, <http://investor.ebayinc.com/releasedetail.cfm?ReleaseID=892350>, (accessed: 20.04.2022).

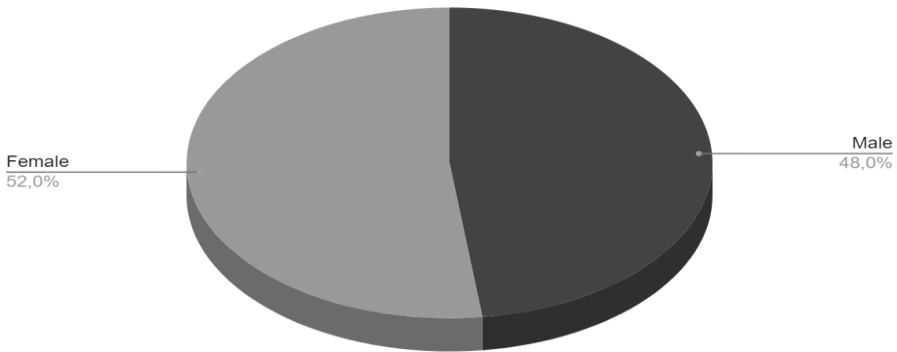
<sup>19</sup> D. Wilson, *The eBay PayPal split – how will it affect you?*, Metro.co.uk., 2014, <http://metro.co.uk/2014/09/30/the-ebay-paypal-split-how-will-it-affect-you-4887462>, (accessed: 20.05.2022).

<sup>20</sup> J. Linshi, *Amazon Launches Online Payment System To Rival Paypal*, Time.com., 2014 <http://time.com/2848315/amazon-online-payment-paypal/>(accessed: 03.03.2022).

sampling, hence the short survey period. Thanks to the recommendation of several people it was possible to find other respondents.

The main objective of the research is to examine the level of logistics customer service on the e-commerce market.

**Figure 1.** Distribution of respondents by gender



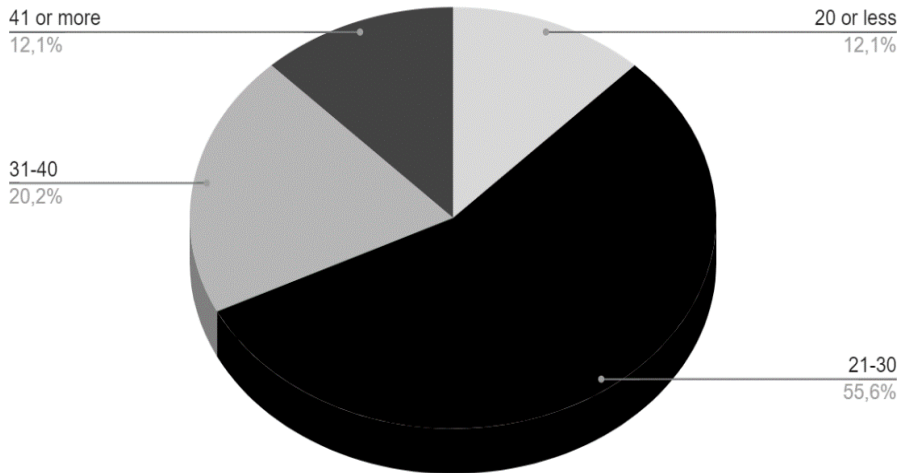
**Source:** Own elaboration based on the results of the survey.

According to statistical data, the proportion of women is 52 percent, while men are 48 percent.

Due to the selection of the sample method, the respondents were divided into 4 age groups (Figure 2):

- 20 or less – 12% respondents,
- 21-30 – 55% respondents,
- 31-40 – 20% respondents,
- 41 or more – 12% respondents.



**Figure 2.** Age groups of the respondents

**Source:** Own elaboration based on the results of the survey.

The respondents gave their place of residence according to the number of inhabitants:

- 0-10 000 – 5% respondents,
- 10 001-50 000 – 9% respondents,
- 50 001-150 000 – 32% respondents,
- 150 001-300 000 – 21% respondents,
- 300 001 or more – 33% respondents.

Respondents were allowed multiple choices in the question regarding finding out about e-commerce platforms. The largest number of respondents chose Social Media (65.4%), followed by recommendations from friends and a search engine. Both options received equal approval (42.2%). The last option was TV (22.1%). Summarizing the answers concerning the information from where we find out about e-commerce shopping opportunities, people are more and more often guided by ads posted on the Internet. TV is becoming less and less popular.

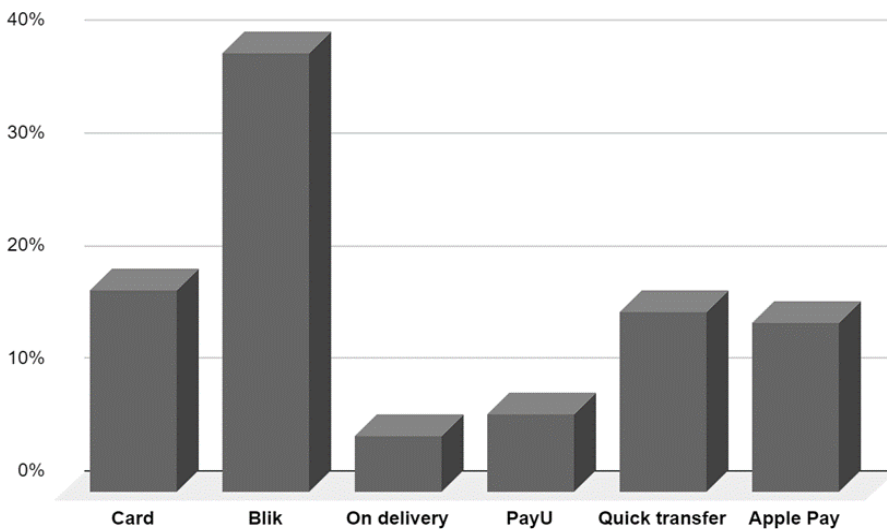
Allegro reached 69.7%, thus achieving the highest score, followed by Ebay at 61.4%, then Amazon at 56.6% and lastly Alibaba at 54.7%.

## Results

The research was carried out using Likert scale, where "1" was responsible for the "not important" factor and "5" – "very important". Then the average for each criterion was calculated. It shows that the most important criteria was the price – it got 85%, then punctuality of delivery, which got approximately 80%. Payment terms received the lowest rating (57%). The rest of the criteria ranged from 65% to 79.6%. The survey participants had the right to a single choice.

The survey's further analysis includes e-commerce customers' payment preferences (Figure 3).

**Figure 3.** Customers' payment preferences for online purchases

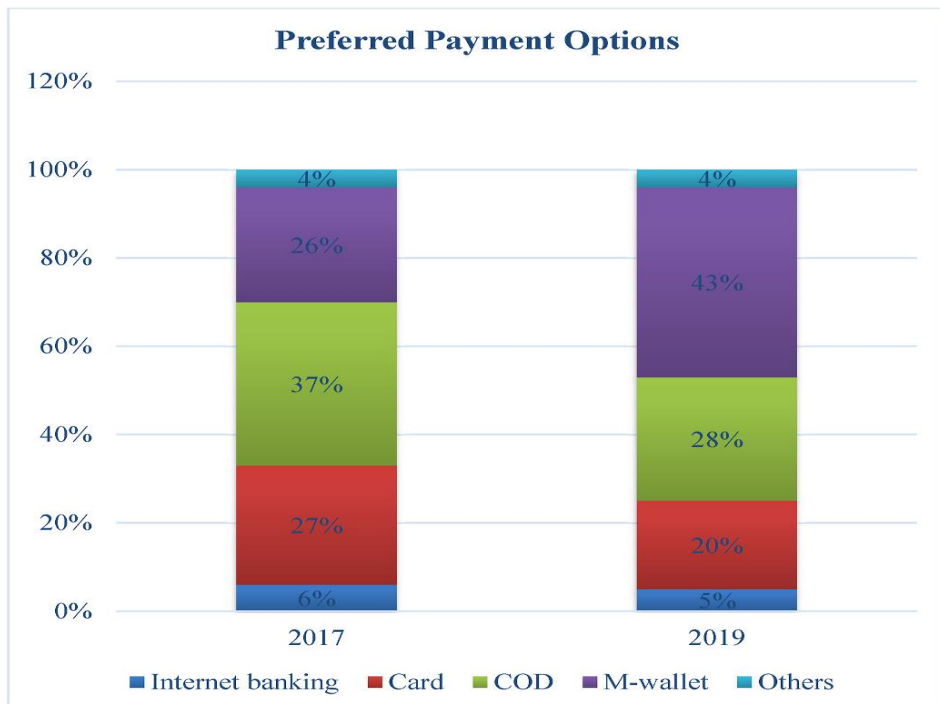


**Source:** Own elaboration based on the results of the survey.

The majority of participants (39%) said they prefer payment by Blik-mobile payment system, followed by payment by card (18%), quick transfer (16%), apple pay (15%), and PayU (7%) before the last most preferred payment was PayU (7%) and payment on delivery (5%).

Payments in the e-commerce market in 2017 and 2019 are presented for comparison.

Different payment options, specifically cash-on-delivery (COD), have generated trust in the mindsets of customers towards online shopping in the developing countries. Customers in tier-II and tier-III cities usually preferred the COD payment option and triggered approximately 50-55% of total online retail shipments<sup>21</sup>. However, post demonetization and the digital India initiative by the Government of India, consumers switched to innovative payment options like mobile wallets in addition to cards and COD.



**Figure 4.** Preferred payments option in the e-commerce market in 2017 and 2019

**Source:** N.K. Jain, H. Gajjar, B.J. Shah, *Electronic logistics service quality and repurchase intention in e-tailing: Catalytic role of shopping satisfaction*,

<sup>21</sup> KPMG, *E-commerce retail logistics in India – driving the change*, 2018. <https://assets.kpmg/content/dam/kpmg/in/pdf/2018/05/e-commerce-retail-logistics.pdf> (accessed: 1.06.2018).

*payment options, gender and returning experience*, Journal of Retailing and Consumer Services 59 (2021) 102360, <https://doi.org/10.1016/j.jretconser.2020.102360> (accessed: 1.10.2022).

Figure 4 shows that the share of COD reduced from 37% in 2017 to 28% in 2019<sup>22</sup>. Despite this, COD remains one of the most preferred payment options by consumers in the Indian context.

In the 2017-2022 period for payments in the e-commerce marketplace, the largest decrease of 32 per cent is for collection – payment on delivery. An increase of 10 per cent in fast transfers, a decrease of 9 per cent in card payments and the largest increase in mobile payments (apple pay and blik) of 18 per cent can be noted.

## Conclusion

E-commerce also brings great opportunity for the company to promote the technological upgrading of local industry, for example the cooperation between e-commerce platforms and logistics industry, the better knowledge of the market and the production, and financing technological upgrading in government-supported industrial parks. Meanwhile, the legal part cannot be overlooked during the e-commerce development. First, this study lacked generalizability as the data was collected from Poland, and the sample was skewed towards youth. Second, this study considered products from the product categories of consumer electronics, apparel, and books from Allegro, eBay and Amazon. Future studies shall develop product category-specific frameworks to gain deeper insights into relationships. Third, this study focused on the role of payment options; however, future research can analyze how payment options can generate trust in e-commerce. Fourth, this study didn't differentiate returns or product exchanges.

## Reference

1. Allegro, *Skonsolidowany raport roczny grupy Allegro.eu*, za rok zakończony 31 grudnia 2020, 2021, p.42. <https://about.allegro.eu/static-files/39ad8578-b042-4efd-a242-fa556f742a02> (accessed: 28.05.2022).
2. BestShoppingCartReviews.com, *History of Ecommerce*, <http://www.bestshoppingcartreviews.com/content/history-of-ecommerce.html>, (accessed: 08.04.2022).

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<sup>22</sup> Statista, 2020. Ecommerce report 2020, statista digital market outlook – market report. available at: <https://www.statista.com/outlook/243/119/ecommerce/>(accessed: 15.06.2020).

3. Borenstein S.N., Ferguson J., Hall J., Lowery C., Mintz R., New D., Parenti B., Rose M., Stefferud E., Stein L., Storm C., Vielmetti E., Weiser M., Wolff P.R., *The Lessons of First Virtual's First Year*, Austin: Frontiers in Electronic Commerce, 1996, <http://web.archive.org/web/19961104175714/http://www.fv.com/pubdocs/fv-austin.txt>, (accessed: 20.04.2022).
4. Brzozowska-Woś M., *Kierunki rozwoju handlu elektronicznego*, (in:) *Przedsiębiorstwo we współczesnej gospodarce – teoria i praktyka*, Politechnika Gdańska, Gdańsk 2014.
5. Chaffey D., *Digital Business and E-commerce Management*, WN PWN, Warszawa 2016.
6. Christopher B.B., *FDIC Banking Review, Federal Deposit Insurance Corporation*, 1996, Vol. 8 No. 3 Article III, <https://www.fdic.gov/bank/analytical/banking/1995summ/art>, (accessed: 03.05.2022).
7. eBay Inc., *eBay Inc. Reports Fourth Quarter and Full Year Result*, 2015, <http://investor.ebayinc.com/releasedetail.cfm?ReleaseID=892350>, (accessed: 20.04.2022).
8. Ecommerce-Land.com, *History of Ecommerce*, 2014, [http://www.ecommerce-land.com/history\\_ecommerce.html](http://www.ecommerce-land.com/history_ecommerce.html), (accessed: 20.04.2022)
9. Feldy M., *Sklepy internetowe*, Wolters Kluwer Polska Sp. z o.o., Warszawa, 2012.
10. Jain N. K., Gajjar H., Shah B. J., *Electronic logistics service quality and repurchase intention in e-tailing: Catalytic role of shopping satisfaction, payment options, gender and returning experience*, *Journal of Retailing and Consumer Services* 59 (2021) 102360, <https://doi.org/10.1016/j.jretconser.2020.102360> (accessed: 1.10.2022).
11. Jiang T., Tuzhilin A., *Improving personalization solutions through optimal segmentation of customer bases. IEEE Transactions on Knowledge and Data Engineering*, 2009.
12. KPMG, *E-commerce retail logistics in India – driving the change*, 2018. <https://assets.kpmg/content/dam/kpmg/in/pdf/2018/05/e-commerce-retail-logistics.pdf> (accessed: 1.06.2018).
13. Lamond K., *Credit Card Transactions: Real World and Online*, 1996, <http://www.virtualschool.edu/mon/ElectronicProperty/klamond/Cyberpmt.htm>, (accessed: 20.04.2022).

14. Le Thi M., Liaw, Shu-Yi., *Effects of Pros and Cons of Applying Big Data Analytics to Consumers' Responses in an E-Commerce Context*. Sustainability 9, no 5, 2017.
15. Linshi J., *Amazon Launches Online Payment System To Rival Paypal*, Time.com., 2014 <http://time.com/2848315/amazon-online-payment-paypal/> (accessed: 03.03.2022).
16. Nguyen D.H., de Leeuw S., Dullaert W., Foubert B.P., *What is the right delivery option for you? Consumer preferences for delivery attributes in online retailing*. Journal Business Logistics, 2019.
17. Smużniak M., Bienias M., *E-commerce na platformach ofertowych Allegro, eBay, Amazon*, Wyd. Helion, Polska 2019.
18. Statistica, 2020. Ecommerce report 2020, statista digital market outlook – market report. available at: <https://www.statista.com/outlook/243/119/ecommerce/> (accessed: 15.06.2020).
19. Sępnicka N., *Business models and e-business models in the Digital Economy. The use of the traditional business models in the online enterprise on the example Allegro.pl*, Przedsiębiorczość i Zarządzanie, Wyd. SAN, 2486 Tom XIV, Zeszyt 12, Część II, Kielce 2013.
20. Tang C.S., Veelenturf L.P., *The Strategic Role of Logistics in the Industry 4.0 Era*. (In:) Transportation Research Part E: Logistics and Transportation Review, vol. 129. Elsevier, 2019.
21. Wilson D., *The eBay PayPal split – how will it affect you?*, Metro.co.uk., 2014, <http://metro.co.uk/2014/09/30/the-ebay-paypal-split-how-will-it-affect-you-4887462>, (accessed 20.05.2022).

## PLATNOŚCI W LOGISTYCE E-COMMERCE

W artykule przedstawiono rynek e-commerce oraz płatności dokonywane na tym rynku. Celem analizy jest zbadanie rodzajów płatności na rynku e-commerce przez klientów indywidualnych (B2C). Metody badawcze, które zostały wykorzystane: analiza literatury przedmiotu, sondaż diagnostyczny z wykorzystaniem techniki ankietowej, obserwacja, analiza porównawcza. Większość uczestników badania (39%) stwierdziła, że preferuje płatność za pomocą systemu płatności mobilnych Blik, następnie płatność kartą (18%), szybki przelew (16%), apple pay (15%) oraz PayU (7%). Płatności przedstawione w badaniu zostały porównane z danymi z 2017 i 2019 roku.

*Słowa kluczowe:* handel elektroniczny, płatności, logistyka, klienci.