

KEY FEATURES OF FULFILLMENT SERVICES FOR E-COMMERCE

Dariusz STRZĘBICKI

Warsaw University of Life Sciences; dariusz_strzebicki@sggw.edu.pl, ORCID: 0000-0003-1656-4268

Purpose: The study aims to identify the most important features of fulfillment services for e-commerce by analyzing the content of logistics companies' websites. It seeks to determine which aspects are most frequently highlighted and how fulfillment providers can enhance their competitiveness.

Design/methodology/approach: The research employs a content analysis approach, examining the frequency of specific logistics service features on fulfillment companies' websites. The data is quantified to identify key trends and priorities within the industry.

Findings: The results indicate that fast shipping, seamless IT integration, and flexible cooperation are the most frequently emphasized features. Additionally, personalized packaging, error-free order processing, and multi-carrier delivery options are key competitive factors for fulfillment providers.

Research limitations/implications: The study is based on publicly available content from logistics companies' websites, which may not fully reflect the actual services offered. Furthermore, it does not account for customer perceptions or direct business performance indicators.

Practical implications: The findings provide fulfillment companies with insights into industry trends and highlight areas for improvement. Businesses can refine their service offerings to align with e-commerce retailers' priorities, such as speed, reliability, and seamless technology integration.

Social implications: By improving fulfillment services, e-commerce logistics providers can contribute to greater consumer satisfaction, reduced environmental impact through optimized packaging and delivery solutions, and enhanced efficiency in e-commerce.

Originality/value: This research offers a data-driven perspective on fulfillment service priorities, filling a gap in the literature by focusing on how logistics providers present their offerings online. It provides a valuable reference for both researchers and industry professionals seeking to understand and enhance fulfillment strategies.

Keywords: e-commerce, order fulfillment, logistics services, supply chain optimization.

Category of the paper: Research paper.

1. Introduction

In fast-changing e-commerce, order fulfilment services have become an essential factor in the success of online shops. Consumers' growing expectations for fast, reliable and convenient delivery of online purchases continue to rise, so the ability of businesses to manage inventory, process orders and deliver timely shipments is becoming a key determinant of competitiveness. At the same time, competition makes it increasingly necessary for online shops to focus on the processes involved in promoting their online offerings, making it more difficult for them to effectively implement logistics processes related to order fulfilment.

Online shops wishing to specialize in marketing activities have the option of outsourcing fulfilment to logistics providers. Logistics companies, offer end-to-end fulfillment solutions, handling tasks such as warehousing, picking, packing, shipping and returns management. These services not only streamline supply chain operations, but also enable online shops to focus on their core functions, such as product development and marketing, while maintaining customer satisfaction. The integration of advanced technologies, such as real-time tracking and automated inventory management, further increases the efficiency and accuracy of fulfilment processes, making them essential in the digital age. When deciding on fulfillment service providers, online shops are forced to make a strategic choice.

The aim of this article is to identify the important characteristics of fulfillment services that logistics companies offer for e-commerce. In the presented research, the author assumed that fulfillment companies, as experts in the industry, emphasize the most important elements and features of fulfillment services in their promotional messages on their own company websites, so as to encourage their potential customers, such as online shops, to choose their offer. By analyzing the messages it is possible to identify the key features of fulfillment services provided to e-stores. The article also discusses the advantages, challenges and criteria that companies need to consider when choosing a fulfillment partner for order fulfilment.

This research will be valuable for order fulfillment service providers seeking to enhance their offerings and better align with the needs of e-commerce businesses. E-commerce retailers can use the findings to evaluate fulfillment partners based on critical service features. Additionally, logistics and supply chain professionals will gain insights into industry trends and strategies for improving operational efficiency. The study may also benefit researchers and policymakers interested in the evolving landscape of e-commerce logistics and its impact on market dynamics.

2. Literature review

Intense competition among online shops, combined with the increasing demands of online shoppers, has made efficient order fulfillment processes a key success factor in e-commerce (Rahman, Kirby, 2024, p. 16). In the e-commerce market, buyers expect fast and affordable delivery. Online shoppers are looking not only for convenience, but also for a seamless shopping experience, from order placement to delivery (Bilgihan, Kandampully, Zhang, 2015, p. 114). In e-commerce, fulfillment refers to the processes of receiving, processing and delivering an order to the customer (Isac, 2014, pp. 122-123). Order fulfillment is one of the key factors that influence consumer behavior and, in particular, has a positive impact on buyer loyalty and repeat purchases in e-shops (Nguyen, Leeuw, Dullaert, 2018, pp. 262-263). Research indicates that the quality of e-commerce order processing is strongly positively correlated with e-satisfaction and e-loyalty of customers to the e-store (Camilleri, 2021, p. 387). In an online environment where one negative delivery experience can lead to lost customers and a damaged reputation, prioritizing delivery performance is essential to survive and succeed in e-commerce (Acimovic, Farias, 2019). In addition to the benefits in terms of customer satisfaction and loyalty, improved order processing minimizes errors and reduces e-shop operating costs (Sharma, 2024, p. 60).

Online shops can handle order fulfillment by managing all fulfillment processes internally or outsource all or some of it to external logistics companies. In this case, logistics companies providing fulfillment services take over fulfillment processes from online shops such as storage and inventory management, order processing, picking and packing, shipping and delivery, returns handling, customer service (Kawa, 2017, p. 431).

The advantage of outsourcing fulfillment services to third-party logistics operators is that no e-shop resources are involved in order processing, but the disadvantage is that the e-shop has less control over the sale of products (Niedźwiedzińska, 2018, p. 933). By outsourcing fulfillment processes to logistics providers, online shops can save on warehousing, staff, equipment and other logistical expenses. They also have the opportunity to use different types of services that can be scaled up when sales increase. These service providers specialize in logistics, which means they often have optimized processes, advanced technology and skilled staff to ensure efficient and accurate order processing. They also have multiple warehouse locations closer to key customer bases. This enables them to reduce delivery times, increasing customer satisfaction.

On the other hand, however, outsourcing order fulfillment means handing over much of the customer service to a third party. If the service provider fails to meet customer expectations, the online shop's reputation may suffer. It should also be noted that not all order fulfillment providers offer the same standard of service. Differences in service quality can result in inconsistencies in order accuracy, packaging standards and delivery times, which can lead to

customer dissatisfaction. When online shops work with a third party, maintaining good communication regarding stock levels, order status and returns can be challenging. Miscommunication errors and misunderstandings can result in stock shortages and delayed orders. Disadvantages of outsourcing order fulfillment can also include: limited customization options for online buyers, relatively high unit storage costs, dependence of logistics operations on an external entity (Prokopowicz, 2023, p. 50).

Order fulfillment, like any other type of service, must meet the high quality standards that define exceptional service delivery in any industry. High quality service is characterized by reliability, responsiveness, assurance, empathy and tangibility - principles derived from the SERVQUAL service quality concept (Parasuraman, Zeithaml, Berry, 1988). In the context of order fulfillment, reliability translates into the accurate and timely processing and delivery of orders, ensuring that promises made to customers are fulfilled flawlessly. Responsiveness reflects the ability of service providers to quickly resolve issues, adapt to change and meet customer requirements. Assurance involves building trust by demonstrating competence, professionalism and responsibility in all interactions, instilling confidence in both the online shop and its customers. Empathy emphasizes personalized service, such as handling special requests or providing solutions tailored to the customer's unique needs. Tangibility refers to the physical aspects of the service, including the quality of the packaging, the condition of the goods after delivery and the presentation of facilities such as warehouses. By excelling in these dimensions, fulfillment service providers not only ensure the smooth operation of online shops, but also increase end-customer satisfaction, making service quality a key competitive advantage.

According to research, there has been a noticeable trend in Poland in recent years of online shops increasingly resign from their own warehouses (Surpel, 2022, p. 779). This makes the simultaneous growing demand for fulfillment services provided by specialized logistics operators

There are many different companies offering fulfillment services in Poland, ranging from multinationals to logistics companies and small specialized local operators (Kawa, 2021, p. 9). Important players in this market are 3PL companies. They handle a variety of e-commerce supply chain services, including warehousing, order processing and shipping. They work with a number of e-commerce shops and often offer scalable solutions that can grow with a growing online shop. There are also e-commerce specialist warehousing networks on the market through which online shops can store products closer to customers for faster delivery.

Outsourcing order fulfillment services is a type of B2B contract in the supply chain, in which online shops work with third-party logistics providers to handle fulfillment tasks. Unlike simple purchasing, this arrangement often involves a complex contract that sets out the terms of the relationship, defining responsibilities, service levels and mutual expectations of the parties to the transaction. Choosing the right order fulfillment provider requires careful evaluation of many factors. Practitioners and experts in the e-commerce industry point, among

others, to the following factors when selecting fulfillment providers (Pettersson, 2024; Chen, 2023; Kaur, 2023; Maciuba, 2022):

- Experience and reputation in the industry. Ideally, a company should have many years of experience in providing fulfillment services. Particularly with regard to the products offered by the online shop.
- Effective inventory management with ongoing stock reporting.
- Location of warehouses and dispatch centers closer to buyers. This can result in shorter delivery times and lower delivery costs.
- Storage conditions adapted to the specific products stored.
- Price transparency, which means that e-shop owners know what they are paying for.
- High-quality information technology at the fulfillment company's disposal and the ability to easily integrate with e-shops systems. The ability to integrate with e-marketplace platforms is also important.
- Offering customized and additional services.
- Effective customer service and appointment of a dedicated customer service employee for the e-shop.

Given the direct impact of order fulfillment on customer satisfaction and brand reputation, choosing the right logistics partner is an important strategic decision for online shops, requiring due diligence and a clear understanding of the complexities involved in outsourcing this service.

The rapid growth of e-commerce has significantly increased demand for efficient and scalable fulfillment services. As online retail continues to evolve, fulfillment providers must adapt to changing consumer expectations, including faster delivery, seamless IT integration, and omnichannel logistics (Pamdey and Pawar, 2023; Li, Wang, Liu, 2023). However, there is limited research on how fulfillment companies position their services and which features are most emphasized in the industry. Understanding these priorities is crucial for both fulfillment providers seeking to differentiate themselves and e-commerce businesses selecting the right logistics partners.

3. Methodology

The subject of the research was the content of information messages posted on their websites by logistics companies providing fulfillment services. The method used in the research was content analysis. This method is defined as the analysis of the explicit and implicit content of specific material by classifying, collating and evaluating key symbols and themes to determine its meaning and likely effect (Merriam-Webster, 2024). The research followed the following steps.

1. Initial observation of fulfillment providers' websites.
2. Selection of variables for content analysis that represented features of fulfillment services.
3. Selection of the objects to be studied (research sampling), i.e. the websites of fulfillment companies.
4. Conducting a proper content analysis of the websites selected for the study.
5. Quantitative and qualitative analysis of the collected data.

The selection of the sample was purposeful and was guided by the criterion of specialization of logistics companies in the implementation of fulfillment services for e-commerce. These were companies operating in Poland. In order to study various types of companies, both large and small, the research sample included well-known 3PL companies with a large market share, as well as smaller logistics companies. The selection of enterprises for the research sample was made in such a way that the first 30 enterprises were selected, which, after typing the phrase “fulfillment for e-commerce” into Google search engine, were found highest in the search results and at the same time met the condition of specialization of fulfillment services and location in Poland. The addresses of the websites selected for the study are presented in Table 1.

Table 1.

Addresses of the analyzed websites of companies providing order fulfillment services to e-shops

Web addresses of fulfillment companies for e-commerce	
(1) https://tpmlogistics.pl ; (2) https://omnipack.com/pl/ ; (3) https://www.dhl.com/pl-pl ; (4) https://magpack.pl ; (5) https://www.mbe.pl ; (6) https://eurocommerce.pl ; (7) https://labranlogistics.pl ; (8) https://logisticsagencies.pl ; (9) https://customeritum.pl ; (10) https://www.pakujemy.pl ; (11) https://ehopi.pl ; (12) https://mindpack.pl ; (13) https://www.ornlenpaczka.pl ; (14) https://www.qlink.com.pl ; (15) https://sheepme.pl ; (16) https://insidelog.pl ; (17) https://www.salesupply.pl ; (18) https://doing.pl ; (19) https://www.boxe.pl ; (20) https://hartlogistics.pl ; (21) https://eurohermes.eu ; (22) https://imker.pl ; (23) https://www.logmaster.pl ; (24) https://magazyngdynia.pl ; (25) https://trans-tok.pl ; (26) https://logistiko.pl ; (27) https://pro-logis.waw.pl ; (28) https://xbsgroup.pl ; (29) https://yellow-monster.pl ; (30) https://inpost.pl	

Source: own research.

The content analysis was conducted during the months of January and February 2025. The initial observation of the websites made it possible to identify variables representing important characteristics of fulfillment services that were communicated to online shops by logistics providers. The occurrences of these variables were coded which made it possible to determine the frequency of their occurrence in the sample of websites studied. A total of 48 variables were used in the research, which fell into 7 categories. The variables with their symbols and their category affiliation are presented in Table 2.

Table 2.*Names of variables representing characteristics of fulfillment services*

Category names	Variable names
Handling orders and returns	High number of shops serviced (SK); Wholesale handling (ZH); Non-disruptive sales (BS); High number of parcels shipped (SL); Low error rate (ZB); Returns preparation for sales (NP); Cross-border e-commerce handling (ZE); Returns verification (NW); Fast shipping (WS)
Storage	Optimal storage conditions (MO); Ongoing inventory control (MK); Product insurance (UP); Differentiated products (MZ); Use of barcodes (MA); Ample storage space (MP); Large number of warehouses (ML); Owning a cold room (MH); Picking robots (MR)
Transport	Multiple courier companies (TL); Tracking of shipments (SP); Delivery of goods to the warehouse (TS); Attractive location (TW); Possibility of own contracts with couriers (TU)
Cooperation with e-stores	Flexible cooperation with shops (EL); Knowledge and experience (DW); Support in market expansion and marketing (OR); Dedicated shop customer service (OD); Cooperation with large as well as small shops (DM); Professional customer service (PO); Assistance in preparing promotional materials (PP); Long-term contract (UK); Special support in the initial phase of cooperation (WW)
Product packaging	Packaging according to individual guidelines (PI); Additional packaging services (PD); Insertion of promotional materials (PU); Use of ecological packaging (EK); Wide range of packaging and packaging materials (PM); Use of different types of labels (ER); Appropriate matching of packaging to products (PP)
Information technology	Easy IT integration (IM) IT integration with trading platforms (IP) Secure and reliable IT systems (IT)
Prices	Advantageous billing (CK); Low service prices (CN); Stable and predictable prices (CG); Cheap packaging (CO); Lower rates with higher sales (CS); Free integration of systems (CI)

Note. In brackets next to the names of the variables are their symbols used for to facilitate quantitative analysis.

Source: own research.

4. Findings

Figure 1 presents the frequency of variables related to order processing and returns management. The most frequently occurring characteristic in this group is fast shipping, indicating that fulfillment companies recognize that fast order processing and fast delivery is an important competitive advantage in the industry, as well as a key factor in customer satisfaction. Serving foreign buyers (cross-border e-commerce) was also a frequently occurring variable. The significant percentage of cross border e-commerce service shows that fulfillment companies recognize the increasing importance of this rapidly growing branch of e-commerce. A low percentage of order processing errors was also indicated relatively frequently. This may be indicative of the high importance placed on accuracy in logistics processes and high quality. A low percentage of companies indicate that they also handle bulk orders. These services should therefore rather be regarded as niche, with companies focusing primarily on handling e-commerce retail sales.

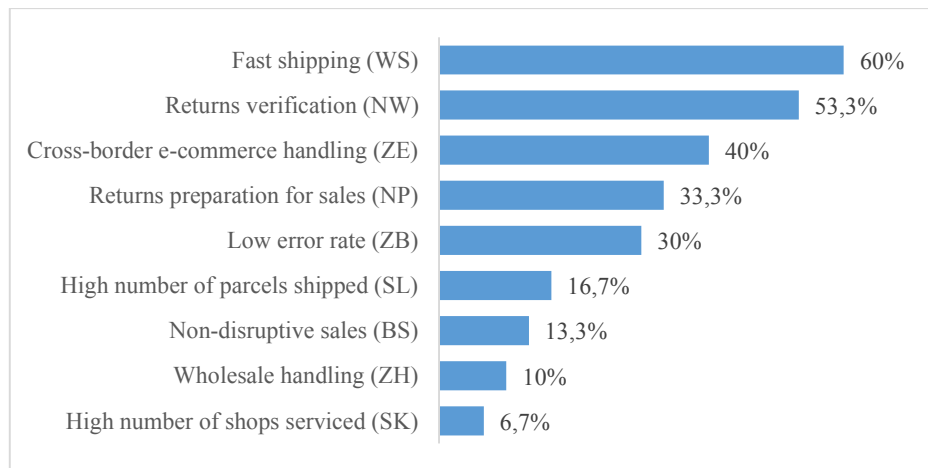


Figure 1. Frequency of order handling variables.

Source: own research.

Figure 1 also includes the variables for handling returns. Of the companies surveyed, all dealt with returns, however, around half indicated that they dealt with thorough verification of returns in terms of quality and quantity, and in some cases companies highlighted that they also dealt with restoring returned products to their commercial value and preparing them for re-sale. The relatively high percentage of features related to returns shows that returns are a major challenge in e-commerce, and fulfillment companies are striving to demonstrate their ability to manage returns effectively.

Figure two shows the characteristics of fulfillment services relating to the storage of products for e-commerce. The most frequently indicated feature in this group was optimal storage conditions for products in the warehouse. Companies often emphasized that the storage conditions are adapted to the specific characteristics of the products, for example in terms of temperature. This shows that fulfillment companies prioritize the protection of the quality of the stored products. Figure 2 also shows that an important feature is the ongoing updating of stock levels and the associated stock control by e-stores. This is a feature that contributes to the availability of products by minimizing stock shortages and helps to improve the functioning of e-commerce supply chains.

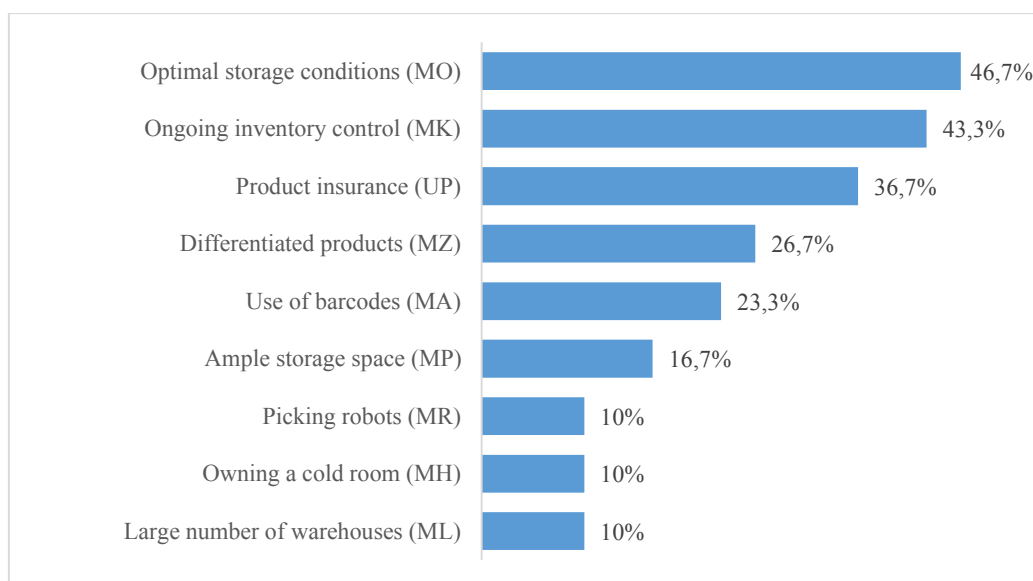


Figure 2. Frequency of storage variables.

Source: own research.

A significant proportion of fulfillment companies also emphasise that the stored products are insured, which can be an important incentive especially for online shops with high-value products.

Declaring the possibility of storing diverse goods (especially in terms of size) shows that this can be a feature that distinguishes fulfillment companies from their competitors in the eyes of shop owners, especially those selling diverse products.

Figure 3 presents the variables for the transport function supported by fulfillment companies.

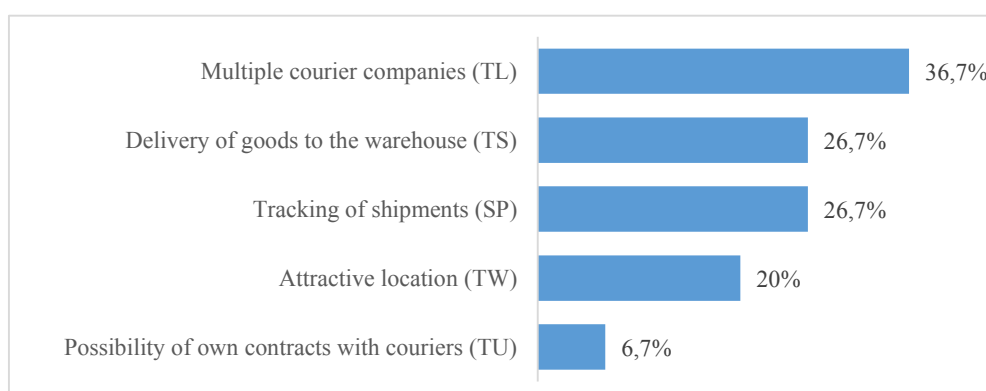


Figure 3. Frequency of transport variables.

Source: own research.

The most frequently highlighted feature in this group was the cooperation of fulfillment companies with multiple couriers. This feature is well perceived by online shop owners, as it is usually associated with greater flexibility in the delivery of products to online buyers, with a greater territorial coverage of deliveries and lower delivery prices.

Some fulfillment companies support the delivery of products to their warehouses, which can be a significant convenience for online shops and encourage them to cooperate. The same percentage of companies provide online shops with shipment tracking, indicating a focus by these companies on transparency and efficiency, which is also a desirable feature from the perspective of streamlining e-commerce supply chain operations.

Although the attractive location of warehouses and dispatch centres is important for fast delivery and logistical efficiency, it is not as often emphasized by logistics providers as working with multiple couriers.

Few companies highlight the possibility of individual contracts with couriers, which may mean that this is not an important feature for online shops and they rather prefer the intermediation of fulfillment providers in this regard.

Figure 4 shows the features associated with the broader cooperation of fulfillment companies with online shops.

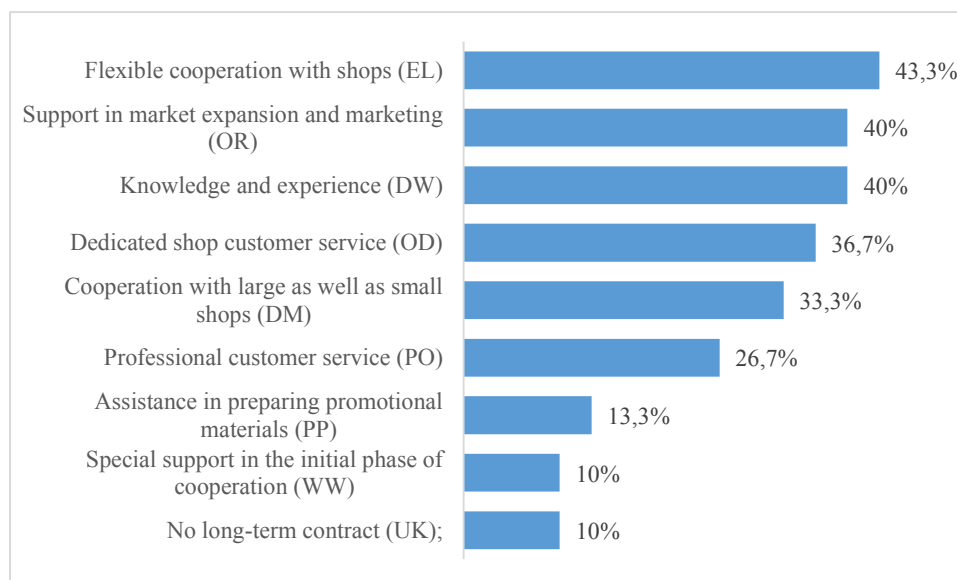


Figure 4. Frequency of cooperation variables with online shops.

Source: own research.

The most frequently indicated feature in this group was flexible cooperation with online shops. This shows that fulfillment providers emphasize their ability to adapt to the preferences of online shops. They offer shops more customized solutions rather than rigid service delivery methods.

Figure four also shows that fulfillment companies often emphasize experience and the ability to help e-stores, e.g. with market development. This positions them not only as fulfillment service providers, but as strategic partners. Offering a dedicated customer (e-shop) service suggests a personalized approach to e-shops by many of the fulfillment providers surveyed.

Figure 5 presents the features of fulfillment services related to the product packaging process.

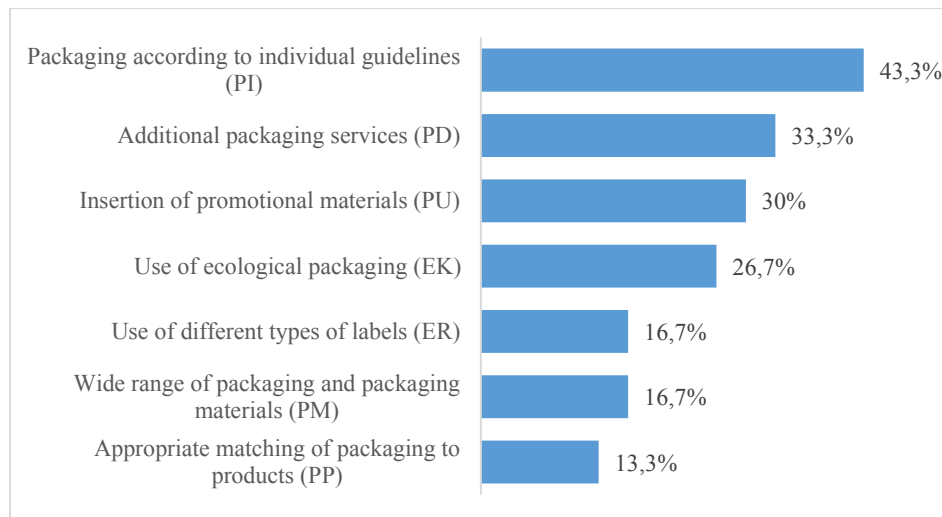


Figure 5. Frequency of product packaging variables.

Source: own research.

The two most frequent variables, packaging according to individual shop guidelines and additional packaging services, show that logistics fulfillment service providers demonstrate their ability to adapt product packaging solutions for the specific needs of e-stores. Some of the logistics providers emphasized the use of eco-friendly packaging, which shows that sustainability is becoming increasingly important in fulfillment services.

Figure 6 shows the important features of fulfillment services in the area of information technology.

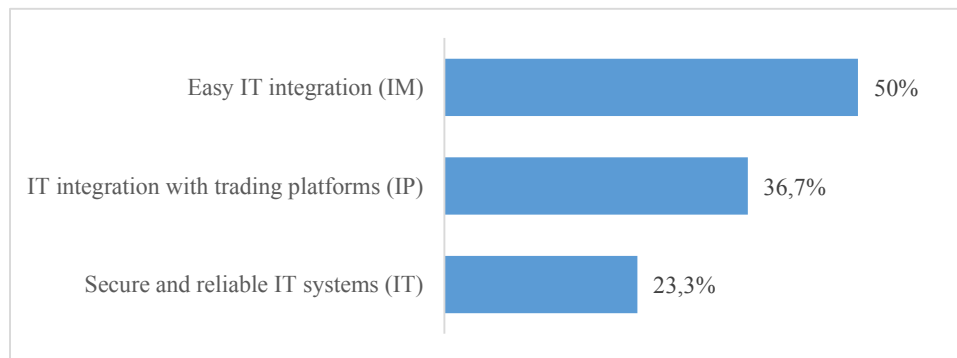


Figure 6. Frequency of information technology variables.

Source: own research.

Figure 6 shows that half of the logistics providers for e-commerce emphasize the seamless integration of their IT systems with those of e-stores. It can be assumed that for e-stores, easy integration of operations with fulfillment providers is a very important feature. Also frequently mentioned was the offered integration with trading platforms. This means that logistics fulfillment providers increasingly emphasize integration with marketplace trading platforms such as Allegro, Amazon and eBay. This trend reflects the growing need for multichannel support, as e-commerce businesses no longer rely solely on their own websites but operate across multiple sales platforms. Seamless integration with these marketplaces allows for

automated order processing, real-time inventory synchronization, and efficient returns management, ensuring a consistent shopping experience for customers across different channels.

The relatively low frequency of the variable - Secure and reliable IT systems, is not a significant differentiating factor from competitors' offerings. This is probably due to the fact that the high reliability of IT systems is taken for granted in the industry and this feature is indicated less frequently in messages.

Figure 7 shows the features associated with the pricing area and with the billing for fulfillment services.

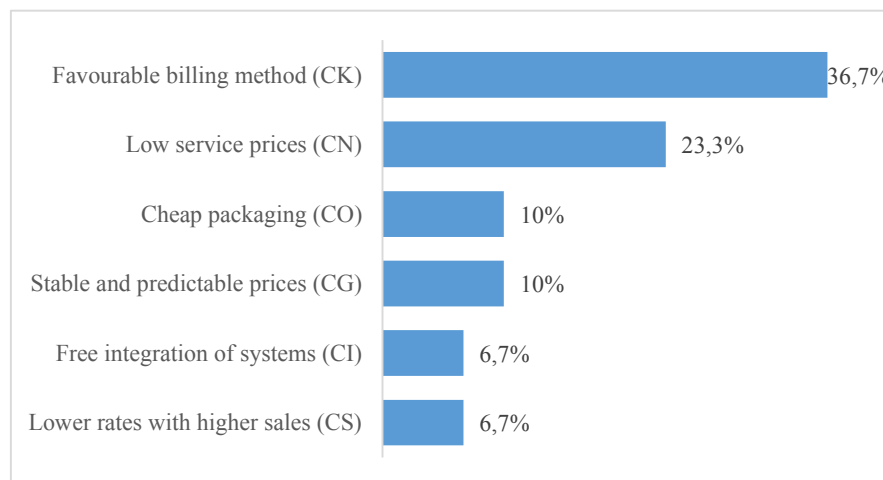


Figure 7. Frequency of fulfillment price variables.

Source: own research.

The most frequently indicated variable was favourable for e-shops billing methods for fulfillment services. Thus, logistics providers emphasize flexible and transparent ways of billing for their services. It can also be seen from Figure 7 that suppliers are less likely to encourage low service prices or price discounts. This suggests that they prioritize value delivery and high service quality over the cheapest options.

5. Conclusions

The research carried out shows that speed of order fulfillment and shipping are the dominant features in the messages on the websites of fulfillment service companies. The high importance of these features is related to the fact that they are an important factor in the satisfaction of online buyers. The growing role of cross-border service by fulfilment companies is also noticeable. This is due to the expansion of global e-commerce. These companies also prioritize high quality storage and ongoing stock control. This reflects the large role of these features in

ensuring product availability and protecting products from damage or deterioration of their commercial value.

The research also showed that online shops prefer to work with fulfillment providers that provide a variety of delivery options via different courier companies. The study also showed that fulfillment providers are positioning themselves in the market as flexible and experienced partners for online shops, rather than pure fulfillment providers. These companies are evolving towards full e-commerce support along with support for e-commerce market expansion.

In the area of packaging processes, the main priority of logistics service providers for e-commerce is customization. This manifests itself in the packaging of products according to the individual requirements of e-shops, as well as in the offering of numerous additional packaging services. Sustainability is also gaining in importance, manifesting itself in the use of ecological, i.e. environmentally friendly packaging.

Considering the cost and pricing factors for e-shops, it can be concluded that the most important factor is a flexible and transparent way of billing for services. Setting low prices is not an often cited feature, which suggests that quality of service, reliability and flexibility are more important than low prices.

Also of great importance is the seamless integration of the IT systems of fulfillment providers with those of the e-shop. The IT support of multichanneling is also noticeable, as shown by the frequent declaration of integration with e-commerce platforms. This shift underscores the critical role of fulfillment providers in facilitating omnichannel retail strategies, where businesses require flexible and interconnected logistics solutions to remain competitive. The findings emphasize the importance of IT integration and platform compatibility as key factors in e-commerce fulfillment.

Based on the research findings, fulfillment companies can enhance their competitiveness by investing in seamless IT integration with e-commerce platforms and develop real-time inventory tracking systems across multiple sales channels to support omnichannel fulfillment. They should prioritize fast shipping and error-free order processing by adopting automated picking, packing, and barcode scanning technologies. They should also partner with multiple courier services to provide flexible delivery options and enhance last-mile efficiency. Logistics enterprises should offer custom packaging options, including eco-friendly materials and promotional inserts, to help e-tailers strengthen their brand identity. Important feature is providing personalized fulfillment solutions tailored to businesses of different sizes. To improve customer engagement and flexibility they should provide dedicated support teams for e-commerce businesses to guide them in fulfillment operations and logistics strategies. Implementing dynamic pricing models that offer lower rates based on order volume, could encourage long-term partnerships.

The research conducted has some limitations. This relies on publicly available website content, which may not fully reflect the actual service capabilities of order fulfillment providers. Companies may emphasize certain features for marketing purposes while omitting aspects that

are less marketable but still operationally significant. As a result, the findings might overrepresent commonly advertised services while underestimating those that are essential but less frequently promoted. To gain a more comprehensive understanding, future research could incorporate complementary method such as interviews with industry experts and fulfillment providers to verify the actual importance of characteristics of the order fulfillment services.

References

1. Acimovic, J., Farias, V. (2019). The fulfillment-optimization problem. In: Operations Research & Management Science in the Age of Analytics, INFORMS Tutorials in Operations (pp. 218-237), doi: 10.1287/educ.2019.0199.
2. Bilgihan, A., Kandampully, J., Zhang, T. (2015). Towards a unified customer experience in online shopping environments. *International Journal of Quality and Service Sciences*, Vol. 8, No. 1, pp. 102-119, doi: 10.1108/IJQSS-07-2015-0054
3. Camilleri, M. (2021). E-commerce websites, consumer order fulfillment and after-sales service satisfaction: The customer is always right, even after the shopping cart check-out. *Journal of Strategy and Management*, 15(3), pp. 377-396, doi: 10.1108/JSMA-02-2021-0045.
4. Chen, S. (2023). *5 Things to Consider When Choosing an Order Fulfillment Company in China*. Shield Works. Retrieved from: <https://www.shieldworksmfg.com/2023/07/28/5-things-to-consider-when-choosing-an-order-fulfillment-company-in-china>, 10.11.2024.
5. Isac, C. (2014). E-fulfillment - a new challenge for electronic business. *Annals of the University of Petrosani, Economics*, vol. 14, iss. 1, pp. 121-128.
6. Kaur, T. (2023). *What Are E-commerce Fulfillment Services And How To Choose One?* Anscommerce. Retrieved from: <https://www.anscommerce.com/blog/choosing-ecommerce-fulfillment-services>, 20.11.2024.
7. Kawa, A. (2017). Fulfillment Service In E-Commerce Logistics. *LogForum*, 13(4), pp. 429-438, doi: 10.17270/J.LOG.2017.4.4
8. Kawa, A. (2021). Fulfilment as logistics support for e-tailers: An empirical studies. *Sustainability*, 13(11), 5988, pp. 1-11, doi: 10.3390/su13115988
9. Li, Z., Wang, J., Liu, J. (2022). Integrative Strategies for Omnichannel Order Fulfillment With Risk Aversion. *IEEE Transactions on Engineering Management*, pp. 1-15, doi: 10.1109/TEM.2022.3189690.
10. Maciuba, D. (2022). *23 Factors to Consider When Deciding to Outsource Order Fulfillment*. Trans.iNFO. Retrieved from: <https://trans.info/en/order-fulfillment-270445>, 5.11.2024.

11. Merriam-Webster (2024). *Dictionary. Content analysis*. Retrieved from: <https://www.merriam-webster.com/dictionary/content%20analysis>, 15.11.2024
12. Nguyen, D.H., Leeuw, S., Dullaert. (2018), Consumer behaviour and order fulfilment in online retailing: a systematic review. *International Journal of Management Reviews*, Vol. 20, No. 2, pp. 255-276, doi: 10.1111/ijmr.12129
13. Niedźwiedzińska, H. (2018). Rozwiązania logistyczne w handlu elektronicznym. *Autobusy*, 12, pp. 931-935, doi: 10.24136/atest.2018.526
14. Pandey, S., Pawar L. (2023). Impact of e-commerce on supply chain management. *Journal of Emerging Technologies and Innovative Research (JETIR)*, Vol. 10, Iss. 5, pp. 297-302.
15. Parasuraman, A., Zeithaml, V., Berry, L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), pp. 12-40.
16. Petterson, T. (2024). *Choosing the Best eCommerce Fulfillment Service for Your eCommerce Business*. Visigistics. Retrieved from: <https://www.visigistics.com/resources/choosing-the-best-ecommerce-fulfillment-service-for-your-ecommerce-business>, 18.11.2024.
17. Prokopowicz, K. (2023). Fulfillment jako innowacyjna usługa z zakresu rozwiązań typu 3PL dla sektora e-commerce – na przykładzie spółki InPost. *Marketing i Rynek*, No. 5, pp. 47-54, doi: 10.33226/1231-7853.2023.5.5
18. Rahman, M., Kirby, D. (2024). The Lean Advantage: Transforming E-Commerce Warehouse Operations for Competitive Success. *Logistics MDPI*, vol. 8(4), 129, pp. 1-17, doi: 10.3390/logistics8040129
19. Sharma, K. (2024). The Impact of E-Commerce on Operational Cost Efficiency in Modern Businesses. *Sachetas*, Vol. 3 No. 3, pp. 56-62, doi: 10.55955/330006
20. Surpel, D. (2022). Outsourcing Of Logistic Services In Polish E-Commerce Stores. *Organization And Management Series*, No. 166, pp. 769-782, doi:10.29119/1641-3466.2022.166.48