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Reservation systems as a tool of tourist services marketing

Abstract. The study of modern reservation systems was conducted to determine their role in the tourism industry and to improve understanding of the basics of marketing activities of tourism enterprises. The article aims to analyze the functioning of modern reservation systems in the market of tourist services, to structure the existing reservation systems according to the operation levels and according to the distribution channels of the tourist product. The main methods of scientific research were: chronological, systematic research, logical analysis, statistical and structural analysis, which made it possible to logically and systematically investigate the modern reservation systems of and determine their hierarchy. The result of the study was the substantiation and construction of a hierarchy of connections in the world market of tourist service reservation systems, based on the scale of coverage of the tourism sector and the distribution channels of tourist services. In total, there are 5 levels of travel reservation systems in the world. The authors came to the conclusion that modern reservation systems are a marketing tool for travel companies that contribute to the distribution and promotion of travel services

Keywords: global distribution systems; online travel agencies; travel services; distribution channels; ratings

INTRODUCTION

Any company in the tourism market must improve its activities if it wants to remain relevant in this market, keeping in mind the fierce competition and constantly growing customer requirements. In order to permanently have up-to-date information about the market situation, customer needs, and their preferences, companies need to invest in reliable multifunctional reservation systems. This will attract additional customers, expand existing distribution channels, and enable active and high-quality promotion of the tourist service on the market. The study of the current state of the reservation system market requires a permanent approach and processing of the latest analytical and statistical information, in particular, reports/ratings

published by leading companies in the tourism and information spheres.

On the other hand, when travelers book a hotel, flight, cruise or car, they expect an efficient, seamless process, or they may decide to choose another place or company. For today's tourism market companies, meeting the expectations of tourists means abandoning manual processes and investing in reservation systems that will allow tourists to make reservations when they want, on the channel of their choice, with a profitable form of payment.

However, the rapid development of reservation technologies causes a permanent need to study their interaction and mutual agreement, rating, classification, determination

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of their role in the tourism, in particular to attract new tourists, determination of their impact on the competitiveness of companies in the tourism market, on the promotion of their tourism products and the provision of tourism services.

Reservation systems play an extremely important marketing role in the tourism industry, attracting more and more tourists thanks to free access to the choice of a hotel, restaurant or flight, their reservation and simplified payment and, if necessary, to the cancellation of order.

Taking into account the rapid development of reservation technologies and rapid changes in the market of tourist services, there is a need to conduct a study of modern reservation systems in the world. The relevance of the research topic is determined by the need to study the place and role of modern reservation systems in the tourism, their interaction and mutual coordination, their impact on attracting new tourists, on the competitiveness of companies in the tourism market, on the promotion of their tourist products and the provision of tourist services.

Leading Ukrainian and foreign scientists pay considerable attention to information technologies in the field of tourism and, in particular, reservation systems.

Thus, S. Melnychenko (2010) considered IT in the activities of tourist enterprises to ensure effective implementation of marketing functions. However, the distribution channels of tourism services have not been investigated.

M. Skopenia (2015) studied information systems and technologies in the hotel, restaurant and tourism business and paid special attention to the study of specialized software (Orega Enterprise Solution, Moi Otel, 1C: Podpriemstvo 8.2), global reservation distribution systems (Amadeus, Galileo) and online reservation systems (Viliana), as well as other systems (TITBIT) in modern operating conditions of hotel-restaurant and tourist business enterprises.

M. Opalko & T. Primak (2016) investigated the automation of the management of a tourist enterprise through the improvement of the efficiency of its activity. Scientists have summarized and characterized the main software products for automating the work of enterprises, studied global computer reservation systems (GDS), integrated communication networks, multimedia systems, Smart Cards, management information systems and others.

E.A. Falko (2016) reviewed GDS from the point of view of transport reservations, mostly in airlines. The author investigated the activities of the largest GDSs – Amadeus, Saber and Travelport and came to the conclusion that the globalization of the tourism market creates prerequisites for strengthening economic relationships between countries and increasing tourist flows.

Yu.V. Sinyavina & N.M. Protsenko (2018), during the study of information technologies in the modern tourism industry determined their impact on meeting the growing demands of customers and increasing the competitiveness of the tourism business. Special attention was paid to the analysis of the Internet tourist segment and the use of global distribution systems (GDS).

T. Tkachenko & E. Kozlovsky (2018) focused on the study of the peculiarities of the work of global distribution systems (GDS), and also revealed the possibilities and prospects for their further development.

I.V. Bezugliy (2019) analyzed the use of information technologies in tourism in the most extensive way. The scientist's research covered global distribution systems, online booking in tourism, internet portals and computer programs for business automation, mobile applications. The scientist also described the world's largest global distribution systems and the most common booking services.

So, quite a large number of domestic scientists researched the automation and computerization of the tourist business, including reservation systems. The main attention in the works is paid to GRS, their effectiveness, impact on customer satisfaction, development prospects. However, other reservation systems in the travel business are either overlooked or neglected. In particular, the distribution channels of tourist services have not been investigated.

Foreign scientists investigate the problems of reservation systems in tourism in more detail, usually based on statistical data from primary sources of marketing information: surveys, questionnaires, field studies, etc. Such a research methodology makes it possible to obtain complex, substantiated results, which are relevant for practical use in the field of tourism. Consider several scientific studies.

A. Hartini (2018) investigated of the process change that occurs in GRS and web systems process change based on the case study of Agadar Travel. The scientists developed a mind mapping and substantiated its results in a description table. This made it possible to prove that the implementation of web processes in the reservation system increased the effectiveness of interaction with customers, will ensure business sustainability and increase the competitiveness of the travel company.

H. Byun, J. Kim & L. Byeongcheol (2020) analyzed the competitive advantages of leading GDSs in the tourism industry using niche theory. Based on a questionnaire, the authors measured the satisfaction level of travel agencies with the use of GDS. The study suggested directions for improving marketing strategies for selected GDSs.

C. Halkiopoulos & H. Antonopoulou (2020) showed how development of the Internet has changed the operating conditions of tourism companies and created new tools for tourism marketing. The authors argue that technological innovations facilitate communication and interaction between providers of tourism services and with customers.

J. Jović, P. Radovanović & C. Andreeski (2021) studied the impact of GDS on the development of tourism business using the example of travel agencies in Serbia. The authors came to the conclusion that modern information technologies prompted the emergence of electronic distribution channels, which increased the efficiency of activities in the market of tourist services

A.R.C. Perinotto & S.M Araújo (2022) investigated the impact of online reservations on the development of

the hospitality industry. For this purpose, the authors used the conceptual model “social influence” and “price” of the unified theory of acceptance and use of technology 2 (UTAUT2). The results of the survey made it possible to understand the profile of respondents and to determine the factors influence decisions when booking online.

Y. Zhao & H. Wang (2022) used the example of China to investigate online tourist attraction reservation intentions and factors affecting them. In particular, scientists singled out the effect on the reservation of government policy, usefulness and perceived risk. The findings of the study improved the understanding of reservations and the TAM (technology acceptance model) theory.

The analysis of scientific works allowed us to come to the conclusion that the problems of researching various aspects of modern reservation systems in tourism are quite broad. Scientists successfully find new niches for study, which makes it possible to implement new practical tools for tourism marketing. However, despite the versatility of the study of reservation systems, a comprehensive view of the modern world structure of reservations in tourism, the relationships between individual reservation systems and the formation of distribution channels of tourist services with their help is also necessary.

The purpose of the article is to analyze the functioning of modern reservation systems on the market of tourist services, to get acquainted with the ratings of reservation systems to determine the best and most effective reservation systems; to structure the existing reservation systems according to the levels of operation and according to the distribution channels of the tourist product.

MATERIALS AND METHODS

The research was conducted on the basis of international ratings of GDS (Hotel Tech Report, 2022b; How to choose..., 2021), OTA (Top 10 online..., 2022; Andrews, 2022; Hotel Tech Report, 2022d) and CRS (Hotel Tech Report, 2022a; Top 14 airline..., 2021), statistical information on the activities of the world's largest reservation systems (Distribution of sales channels..., 2022) and leading online travel agencies (Online travel market..., 2022; Revenue of leading online..., 2022), reports of leading reservation systems (Hotel Tech Report, 2022c; Hotel Tech Report, 2022b; Amadeus Altea Suite, 2021) scientific publications of foreign and Ukrainian scientists.

Descriptive research method became basic in this work. This method, with the help of qualitative and quantitative data, made it possible to formulate the essence of the research, to describe the reservation systems operating in the market of tourist services in retrospect and in current trends, to analyze the connections between various elements of the reservation system, and to summarize the results. Together with the descriptive method, others were also used, depending on the stage of the research execution sequence.

The search-analytical method was used to collect the necessary primary information and study literary sources.

With its help, necessary information for further processing was selected.

Based on the critical analysis, the literary sources were worked out and the author's opinion on the directions of scientific research on the selected issues was formulated. This made it possible to single out a segment of the research that has not been sufficiently developed in the scientific literature.

A retrospective study of the main foundations of the development of reservation systems, in particular global distribution systems and online travel agencies, was carried out using a chronological method.

The next stage of the research was the analysis of the current state and statistical data in terms of reservation systems in the field of tourist services. The authors used the system research method, which made it possible to determine the state of the research objects, their internal structure, and the relationships between reservation systems. At the same time, the method of statistical analysis made it possible to analyze the indicators published in the reports of GDSs, OTAs, CRSs and make a ranking within the limits of the selected reservation systems.

The logical analysis method served as a basis for determining the impact of reservation systems on the competitiveness of travel service providers and travel agencies. At this stage of the research, the authors focused on the need to use innovative automated reservation systems in the operational activities of travel service providers and to demonstrate a direct connection between the growth of the company's competitiveness, the increase in the number of involved customers and the use of modern reservation systems.

The last stage of the scientific research was based on the method of structural analysis, which was used to build a hierarchy of the world's tourist service reservation systems and the possibility of booking for tourists. At the same time, the structural analysis made it possible to identify the distribution channels of tourist services in the world hierarchy of reservation systems.

RESULTS

A reservation system is an automated program of travel market companies that is used to receive and store information regarding operations related to air travel, hotels, car rentals or other activities.

Modern reservation systems make it possible to establish a direct connection between:

- a tourist – a travel service vendor (hotel, airline, restaurant, etc.);

- a travel service vendor – a travel agency;

- a travel agency – a travel agency.

Modern reservation systems include:

- Global Distribution Systems (GDSs);

- Central Reservation Systems (CRSs);

- OTA reservation systems;

- booking through websites;

- booking via call centers.

GDSs are global network systems, the history of which

began in the 1960s, when American Airlines with the assistance of IBM created an electronic reservation system called “Semi-automated Business Research Environment” (SABRE) (Cloudbeds, 2022). Since then, reservation system technology has changed significantly.

Today global distribution system (GDS) is an information-communications system used for selling of services in tourism (Jović *et al.*, 2021). GDSs represent the electronic market that connects travelers, travel agencies, airlines, hotels, etc., and they have functioned as platforms for e-commerce in the travel industry to provide virtual real-time connections among thousands of travel inventory providers and several hundred thousand of travel product retailers (Byun *et al.*, 2020).

GDS contributes to the positioning and promotion of travel companies and their services, and attracts an ever-increasing number of tourists (How to choose..., 2021).

A GDS differs from the on-premises computerized reservation system used by travel service vendors in terms of scope and operational principles. The GDS functions as an intermediary between the travel agent and the Central Reservation System (CRS).

This means that the main clients of GDS are travel agencies that make reservations in systems managed by travel service providers. The GDS has real-time communication with the provider’s database (for example, the number of able hotel rooms or able seats on airplane). GDS does not build inventory: availability (rooms/cars etc.) is checked against the vendors’ own reservation system (CRS) (What is a computer..., 2022)

In this way, a GDS can link services, fares and reservations, consolidating products and services across all three travel sectors: for example, flight reservations, hotel reservations, car rentals.

In other words, the GDS is like a “window” into the hotel’s CRS system, for example, which shows available rooms, prices and restrictions. When a travel agency makes a room reservation, the GDS transmits the reservation information to the hotel system and removes the room from the hotel system’s reserve. A travel agent can complete the booking with just a few clicks instead of calling each vendor. And in this way, through GDS, travel agents can book not only flights or hotels, but also car rentals, cruises, train tickets and tours. GDS provides time saving, equal access of all travel agents to huge databases of travel vendors and offers huge marketing potential for all travel companies.

The largest Global distribution systems are:

1. Amadeus – the world’s largest GDS and exceptionally popular in Europe.
2. Sabre is the second largest GDS. Most popular in North America.
3. Travelport GDS owns Galileo, Worldspan and Apollo systems.

It is worth noting that all three companies are present in Ukraine and work under the brands Amadeus Ukraine, Travelport UA and Sabre Ukraine, spreading the standards of quality travel booking in our country.

There are also a number of regional GDSs operating in the market, such as KIU, which is popular in Latin America, and Travelsky, which is a state-owned GDS in China (Hotel Tech Report, 2022b).

In 2021, the global distribution system market was valued at roughly 6.1 billion U.S. dollars. This industry was forecast to more than double in size by 2028, reaching 14.6 billion U.S. dollars (Hotel Tech Report, 2022a).

A comparison of the industry coverage of the largest GDSs: Amadeus, Sabre and Travelport is presented in the Table 1.

Table 1. Leading GDS systems in number in 2021

GDS	Airlines	Hotels	Car rentals	Cruise and ferries (lines)	Railways (companies)
Amadeus	490	770 000+	42 000 locations (69 brands)	21	43
Sabre	420+	1 000 000+	40 000 locations (37 brands)	20	50
Travelport	400+	650 000	36 000 locations	50	19

Source: How to choose a GDS (2021)

So, the determining role in the formation of the GDS rating belongs to the airlines, 490 of which cooperate with Amadeus. At the same time, Sabre has the widest network of hotels for cooperation – more than 1,000,000, and Travelport – the most specialized in booking cruises – more than 50. That is, each of the leading GDSs has certain characteristics and occupies a unique niche in the market of booking tourist services. The largest GDSs make it possible

to reserve the services of the main components of the tourism infrastructure and form a common information system for the entire tourism industry.

However, despite the scale and industry coverage of the largest GDSs, each year the hospitality innovation platform Hotel Tech Report identifies the best distribution systems for hotels. The best GDSs for hotels in 2022 are presented in the Table 2.

Table 2. The best GDS providers for hotels in 2022

	GDS	The year of foundation	Company affiliation (headquarters)	Number of employees
1	HotelREZ - GDS Distribution	2004	Manchester, United Kingdom	34
2	DerbySoft	2002	Shanghai, China	201
3	Katanox	2020	Amsterdam, Netherlands	8
4	Travelport Digital Media Solutions	1971	Liverpool, Great Britain	4129
5	Sabre GDS Media	1960	Southlake, USA	7910

Source: Hotel Tech Report (2022c)

Unfortunately, contrary to the scale of activity and a significant share of the GDS market, Travelpor Digital Media Solutions and Saber GDS Media occupy only 4 and 5 places in the ranking, giving way to much “younger” companies. That is, the competition on the GDS market is quite fierce and efforts must be made to keep consumer demand.

The success of global distribution systems (GDS) is directly related to the functioning of central reservation systems (CRS) of tourism companies. CRS is an internal corporate reservation system that ensures coordinated work with the external environment. The most common CRSs are in hotels, restaurants, and airlines, although other travel companies may also use them.

A central reservations system (CRS) is software used in the hotel industry to manage room inventory, rates, bookings, distributions and revenue. It may be housed within the hotel's property management system (PMS) or may be standalone software connected to the PMS (Cloudbeds, 2022).

First of all, the hotel manager masses the hotel tariffs, available room stock and limitations into the CRS. The information is then distributed to the hotel's booking

channels, which include the hotel's website reservation system, OTAs, GDSs, and metasearch sites.

After a tourist books a hotel room on one of these channels, the information is sent back to the CRS, where it is stored until the guest is check in. Information about the availability of free numbers is updated on all distribution channels. This ensures economic efficiency of distribution.

Thus, the authors concluded that CRS of hotels provides an opportunity to expand distribution by reaching different types of sellers (OTAs, travel agents, etc.) in the markets of many countries around the world. CRS gives hotel finance managers insight into the market situation – managers can view prices and room bookings across all distribution channels, allowing them to quickly adapt to the market. In fact, CRS is an effective hub for marketing activities that stores booking information from all distribution channels, enabling hotel managers to receive current market information, adjust prices quickly and be an active player in the hotel business.

The advantages of using CRS in hotels are presented in Figure 1.

**Figure 1.** Advantages of using CRS in hotels

Source: developed by the authors based on Cloudbeds (2022)

Hotels' use of a digital reservation system, as opposed to "manual" reservation processes (mostly via call centers), puts them at a significant competitive advantage due to innovative technology compared to hotels with outdated or non-existent reservation software.

Every year, hospitality platform Hotel Tech Report publishes the Central Reservations Systems Guide, which identifies the leading companies in the hotel reservation systems market. The best hotel reservation systems (CRS) in 2022, according to the Guide'22 (Hotel Tech Report, 2022b) are presented in Table 3.

Table 3. 10 Best Hotel Reservations Systems (CRS) in 2022

Nº	CRS	The year of foundation	Company affiliation (headquarters)	Number of employees
1	Pegasus CRS & Distribution (Cendyn)	1996	Boca Raton, USA	570
2	Windsurfer CRS by SHR	1987	Houston, USA	111
3	Vertical Booking (CRS)	1999	Bergamo, Italy	28
4	GuestCentric CRS	2006	San Diego, USA	59
5	Busy Rooms	2008	Tal Pieta, Malta	52
6	Hotel-Spider	2002	Nyon, Switzerland	9
7	Djubo (CRS)	2003	Noida, India	82
8	Amadeus (iHotelier® Reservations & Booking Engine)	1987	Madrid, Spain	14190
9	RateTiger CRS (by eRevMax)	2001	London, Great Britain	199
10	Inntopia (CRS)	1998	Stow, Vermont USA	85

Source: Hotel Tech Report (2022b)

It's worth noting that 4 of the top 10 CRS companies are located in the USA, and 5 are located in Europe. This indicates the active development of software for hotels in these regions, and, accordingly, the demand for CRS in the hotel business market of these countries.

Airlines, together with hotels, also occupy an important place among vendors of tourist services. Airline reservation systems are extremely important and in demand for both airlines and travelers who want to book flight tickets.

The airline reservation system is a web-based reservation solution that allows the airline to sell its inventory (vacant seats on flights). Tourists can see the availability of free seats on the flight, their price. The system interacts with the GDS and coordinates the distribution channels of interested travel service providers.

The airline reservation system (CRS) use provides significant benefits to airlines, including (What is a computer..., 2022):

- all the services-related customer information such as Passenger Name Record (PNR) or Guest Name Record (GNR) are recorded;
- invoicing, accounting, customer and quota management is possible;
- high speed network of information infrastructure;
- fare quote, ticketing and voucher generating process;
- system can also store customer related information such as all the services provided to a certain customer, type of payment, service information etc;
- CRS are web-based applications which saves a lot of time on administration work;
- interfaces with technologies such as Amadeus, Travelport and APIs/XMLs;

- suitable for B2B and B2C business models;
- includes a comprehensive admin console;
- offers custom reporting.

Here are some of the major players in this field are: Aircore an Airline PSS Powered by Microsoft Azure, Avantik PSS, Abacus, ACCELaero, Axess, KIU, MARS, Radixx.

Of course, every company in this industry is trying to develop and present its own reservation software products to airlines. Therefore, in the CRS market for airlines, there is a quite large list of CRS programs and high competition between developers and providers.

In 2022, the best airline reservation systems were: Amadeus Altea Suite, Videcom, Rusada, Crane PAX, Merlot. aero, AeroCRS, ACCELaero, Radixx Galaxy, Navitaire, Zenith, KUI, SITA Horizont (Top 14 airline..., 2021).

Amadeus Altea Suite became the leader of reservation systems for airlines in 2022. It is a comprehensive passenger service system that provides departure and inventory capabilities, full reservation and delivering unique and integrated solutions to ensure the protection of the airline's key business functions at every stage (Amadeus Altea Suite, 2021).

The features of this program are (Top 14 airline..., 2021):

- reservation;
- inventory;
- departure control system;
- Amadeus EMD Server;
- Amadeus ticketing platform;
- Amadeus ticketing changer;
- Amadeus ticketing changer disruption.

That is, airline CRSs provide not only ticket reservations, but also the solution of various management tasks that satisfy the needs of passengers from the beginning of

the reservation to the end of the flight. With CRS, an airline or hotel management system integrates with a GDS or OTA and provides inventory access to a wide network of distribution channels. CRS provides quality customer support, analyzes company operation by creating detailed analytics and reports, and can advise on revenue and pricing strategies. CRS technology has reached a point where travel agencies cannot do their jobs without it.

CRS is one of the most important tools of any travel agencies to generate more profit and to achieve total guest satisfaction and ensure customer retention (Vizconde & Felicen, 2013).

Conversely, the lack of a reliable and accessible CRS leads to huge losses for the company: a long or complicated order process leads to the refusal of potential customers to complete it. The totality of unearned income can become critical for the company and lead to a loss of competitiveness in the market. This necessitates the constant search for more flexible and fast-acting reservation systems, which would accept different forms of payment, be available in different parts of the world, which would ensure higher conversion rates.

It is worth noting that in 2021, 66% of worldwide sales in tourism and travel were made online, only 34% were offline sales. According to forecasts, this trend will continue increasing the share of online sales to 74% by 2026 (Distribution of sales channels..., 2022). The market size of the global online travel sector was estimated to increase

in 2021 over the previous year. Overall, the online travel market worldwide was expected to be worth roughly 433 billion U.S. dollars in 2021, rising from around 396 billion U.S. dollars in 2020. This market is forecast to amount to approximately 691 billion U.S. dollars by 2026 (Online travel market ..., 2022). This means that the current distribution of travel sales is and will continue to be dominated by online sales, and accordingly, online travel agencies (OTAs) will be actively developing. Therefore, it is appropriate to investigate reservation system technologies in OTAs, especially since they are directly related to GDS and CRS reservation systems of hotels and airlines as consumers of their services.

An online travel agency (OTA) is a web-based marketplace that allows consumers to research and book travel products and services, including hotels, flights, cars, tours, cruises, activities and more, directly with travel suppliers. Every day, millions of travelers around the world use OTAs to plan leisure and business travel (Why do you need ..., 2019).

OTAs give travel vendors (primarily hotels) access to potential guests in locations and volumes that they would have difficulty accessing through their own marketing efforts. In addition, OTAs provide market intelligence and targeting tools to engage with travelers, process reservations, engage with guests, and manage reviews.

OTAs work on a commission basis: they receive a commission after a guest stays at a hotel booked through their service. The best online travel agencies (OTA) in 2022 are presented in the Table 4.

Table 4. The best online travel agencies (OTAs) in 2022

No	OTAs	The year of foundation	Company affiliation (headquarters)	Number of employees
1	Booking.com	1996	Amsterdam, Netherlands	More than 200 countries
2	Expedia	2001	Bellevue, Washington, USA	Over 40 countries
3	Agoda	2005	Singapore	Specializes in the Asian market. Popular in Europe and America
4	Airbnb	2008	San Francisco, California, USA	Worldwide
5	Trip.com (Ctrip)	1996	China	More than 200 countries

Source: developed by the authors based on Top 10 online... (2022)

The top OTAs most popular with travelers are Booking Holdings and Expedia Group. Therefore, the largest number of online bookings are made through these two companies. With many brands spanning different categories and regions, Expedia and Booking cover all corners of the globe and all travel niches.

The vast majority of bookings made through Booking Holdings are overnight hotel stays. In 2020, guests made almost 355 million reservations of this type, in 2021 – about 653 million reservations (Revenue of leading online..., 2022). In 2020, the global tourism industry has been severely impacted by the COVID-19 pandemic. Only in 2021 did tourism slowly begin to recover and return to normal operating conditions (Bhuiyan *et al.*, 2021).

Booking Holdings also offers transportation bookings, with around 31 million car rental days and 6 million airline tickets booked through the company in 2021, although flights are the least popular segment. Overall, Booking Holdings' gross bookings in 2021 reached more than \$76 billion, with the agency model delivering the most value (Revenue of leading online..., 2022).

The ranking of the best global online travel agencies (OTAs) of 2022 also included: HRS, TripAdvisor, VRBO, eDreams ODIGEO, Hotels.com., each of them occupies a certain niche of the travel market and covers significant geographical distribution areas. HRS.com was founded in 1972 and focuses on business travelers eDreams ODIGEO is the largest online travel agency in Europe, offering cheap

flights, travel packages and hotel reservations. Hotels.com is famous for its loyalty programs (Top 10 online..., 2022).

OTAs have become a convenient and fast tool for tourists. Planning each trip is no longer difficult and doesn't require excessive effort. OTAs offer a wide range of services, including online hotel reservations, air tickets and car rentals, which is constantly increasing their popularity among tourists. However, the disadvantage of OTA is controlling a large percentage of hotel bookings and charging high commissions in the process.

According to the authors, it is important that hotels provide travelers with the option to book without a commission, for example, through the hotel's website. Hotel owners can implement a "complex" booking mechanism to cover all categories of tourists and give them the opportunity to choose the best booking system. The expediency of the "complex" approach to the organization of the reservation system in hotels is also confirmed by statistical data published by the Hotel Tech Report (Fig. 2).

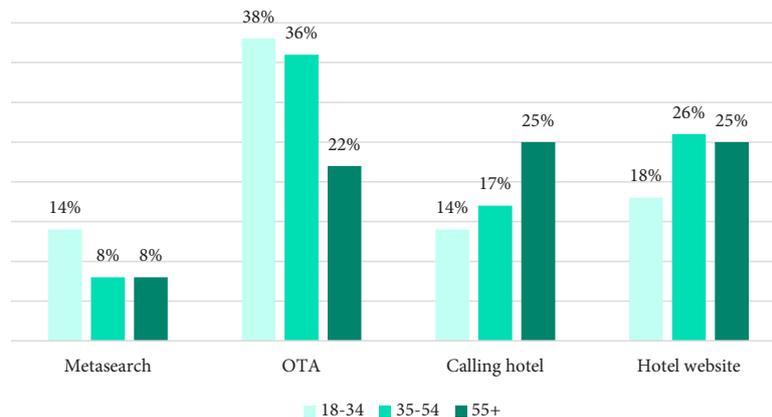


Figure 2. The structure of hotel reservation channels, divided by age of guests

Source: The 20 Best online... (2022)

Thus (Fig. 2), OTA reservation systems are the most popular. The importance of hotel reservations through direct distribution channels – call centers and websites – is also evidenced by the data in the chart. These hotel booking methods are especially in demand among older people – over 55 years old, who prefer direct communication with hotel managers.

Direct hotel booking channels (call centers or web sites) introduced to facilitate booking or to establish direct marketing of hotel services. This diverts traffic away from OTAs to generate more revenue for hotels and ensures a seamless booking process for guests. At the same time, direct booking makes it possible to reach all age groups of guests and not lose them due to "over-computerization".

It is worth noting that the preferences of tourists for the types of reservations have become the subject of research by a number of scientists (Boto-García D *et al.*, 2021; Murphy *et al.*, 2016; Stangl, *et al.*, 2016). The researchers concluded that despite the growing number of online bookings, traditional channels such as the telephone are still important for tourists. And a small proportion of tourists continue to book via offline channels This is relevant for practical use by hotel managers and travel agencies.

So, in order to meet the needs of tourists and reach more and more of them, it is advisable in the hospitality industry to use different booking systems – to implement CRS to cooperate with OTAs, to develop direct booking channels and to cooperate with metasearch engines. That is, to introduce "complex" booking of tourist services. At

the same time, hospitality establishments should remember that the ideal booking system for the guest is one that works flawlessly on mobile devices and is compatible with the social media websites that host the hotel. In addition, the system should allow for flexible payment methods such as Apple Pay, Google Pay, Amazon Pay, Stripe and Paypal to ensure fast and easy booking. This will increase the conversion rate and increase the hotel's income (PSD2 in real life, 2019).

And finally, will consider restaurant reservation systems, which are an integral part of the tourist infrastructure and occupy an important place in the system of providing tourist services. Recent reports have shown that over 50% of people prefer pre-booking their tables (TouchBistro, 2021). Eating out trends are growing and becoming more and more popular. That is why people want to book a table in advance, so as not to wait in line for a free table or not get into the restaurant. Therefore, booking tables in restaurants has become quite popular, and many online systems operate to facilitate it.

The most common online booking channels are direct reservations and third-party booking platforms.

Direct reservations are made by diners directly through the restaurant's website. Restaurants can fully control the reservation process. Third-party online booking is specialized online booking platforms that allow visitors to find and reserve a table in a restaurant for a pre-determined fee. This is an effective channel for a restaurant to reach more diners with minimal effort (Andrews, 2022). The best online restaurant reservation systems in 2022 are presented in the Table 6.

Table 6. The best online reservation systems available for restaurants in 2022

No	Online restaurant reservation systems	The year of foundation	Company affiliation (headquarters)	Reservation system coverage
1	Eat App	2015	Dubai, UAE	60 countries
2	Resy	2014	New York, USA	Over 4.000 restaurants in over 200 cities with reservations primarily in New York, Los Angeles, San Francisco and London.
3	Wisely	2013	Ann Arbor, Michigan, USA	
4	Tock	2012	Chicago, USA	North and South America. Over 50,000 restaurants.
5	OpenTable	1998	San Francisco, California, USA	26 countries, more than 200 cities
6	Yelp Reservations	2004		Over 80 countries, over 60.000 restaurants.
7	Table Agent	2015	San Francisco, California, USA	Over 11.000 restaurants

Source: developed by the authors based on Andrews (2022)

Thus, the online restaurant reservation system market is quite crowded. Operator companies are relatively young, but in terms of territory, reservation systems cover almost the entire world. This confirms the ultra-fast pace of development of Internet technologies, in particular, in the field of restaurant hospitality.

Of course, online restaurant reservation systems have their advantages and disadvantages, but what is undeniable is that they take a huge responsibility off the staff and greatly improve the day-to-day operations of restaurants.

On the other hand, visitors received an extremely convenient service that gave them access to reserve tables in thousands of restaurants around the world with a few clicks on their smartphones.

Consequently, the authors investigated modern reservation systems in the market of tourist services in terms of the components of the tourist infrastructure. Based on the conducted research, will present the hierarchy of relationships between the studied reservation systems and depict it in Figure 3.

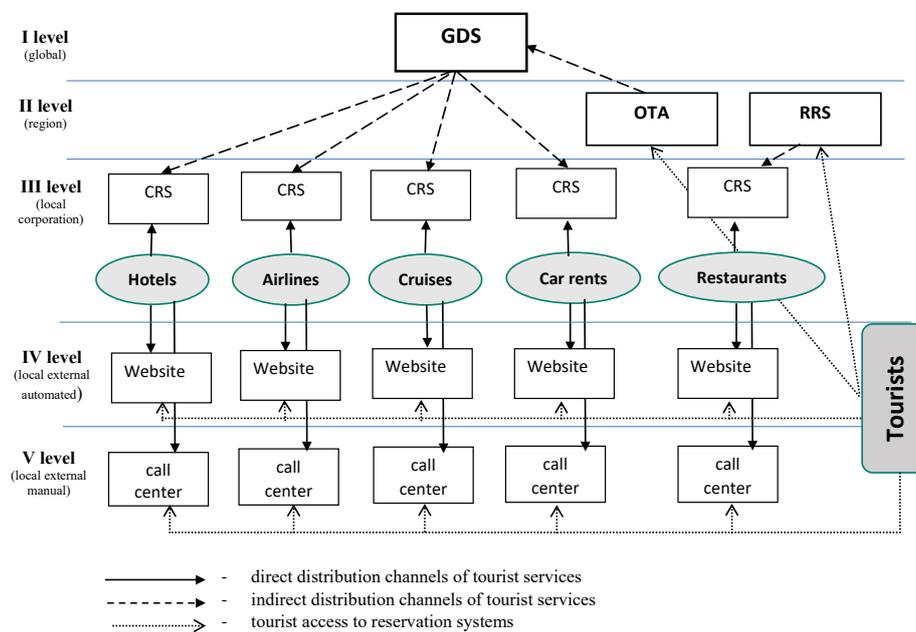


Figure 3. Hierarchy of the world's tourist service reservation systems and reservation options for tourists

Source: developed by the authors

Thus, the conducted research allowed the authors to distinguish 5 levels of the hierarchy of reservation systems in the world.

Level I – global – contains global distribution systems (GDSs), which cover the largest territories and function as an intermediary between OTAs and CRSs of travel

service vendors. Indirect channels of distribution of tourist services pass through GDS.

Level II – regional – includes online travel agencies (OTAs) reservation systems and restaurant reservation systems (RRSs), which cover dozens of countries and thousands of hospitality establishments in different parts of the world. Although level II reservation systems have an extremely wide coverage of the travel services sector, they are distinguished from the global level by the number of companies they cooperate with.

OTAs, by forming indirect distribution channels through GDSs, enable tourists to book hotels, flights, cruises, car rentals, etc., by accessing to the companies' CRS. RRS allows visitors to reserve tables in restaurants, through access to the restaurants' CRS. RRSs also forms an indirect distribution channel for restaurant service.

Level III – local corporation – is the CRSs level of travel service vendors: hotels, airlines, cruises, car rental, restaurants. This is a direct distribution channel. This level of reservation systems is quite wide and well developed, but tourists do not have access to it. These reservation systems are for corporate use only and to communicate with higher level reservation systems – GDS, OTA or RRS.

Level VI – local external automated – is a booking system through websites of travel service vendors, which are their link with the external environment. Through websites, tourists can quickly and without intermediaries (directly) book the necessary service and get an answer immediately. The reservation system through websites is a direct distribution channel of travel companies and has many advantages for tourists.

Level V – local external manual – includes reservations made by tourists through call centers. It is also a direct channel for the distribution of tourist services. A feature of this level is the lack of computerization of the reservation process. The tourist contacts the company directly, expresses his wishes, and the operator (manager) manually enters the guest's reservation data into the system.

So, the proposed hierarchy of the world's tourist service reservation systems is quite complex and extensive, covers all vendors of tourist services and demonstrates the possibilities of tourists to book a service. Also, this hierarchy made it possible to display direct and indirect distribution channels of tourist services, which, from the marketing point of view, play a decisive role in the product promotion and make it possible to attract new consumers of tourist services every time. In this context, we agree with the statement (San-Martín *et al.*, 2020) that reservation systems in

tourism are the most important marketing channel, and understanding the reservation structure will help managers of travel companies implement more effective pricing strategies (Wen *et al.*, 2020).

CONCLUSIONS

The tourism business is actively developing both within each country and around the world. The basis for the development of tourism is created by computer reservation systems, the emergence of which was caused by the computerization and digitalization of the service sector. Computer reservation systems simplify tourists' access to tourist services, provide ease and simplicity of their selection and reservation. Computer reservation systems show high efficiency and multifunctionality in the activities of tourism companies, demonstrate the possibility of covering large areas and attracting millions of tourists.

The study made it possible to analyze the modern world market of travel reservation systems and to determine its hierarchical structure. The scale of coverage of the tourist sphere and channels of distribution of tourist services were laid as the basis of the hierarchy of reservation systems.

Thus, global distribution systems (GDS) were assigned to the I global level; online travel agencies (OTA) and restaurant reservation systems (RRS) formed the II regional level; at the III level – local corporate level – the functioning of the central reservation systems (CRS) of companies providing tourist services is allocated; the VI level was formed by local external automated reservation systems, in particular, websites of travel companies; and level V – local external non-automated reservation systems, formed by the call centers of travel companies.

The ease of booking with the help of various computerized reservation systems makes it possible to attract an increasing number of tourists to popular and new hospitality establishments, as well as to use the services of airlines, railway transport or rental cars without problems. In fact, reservation systems have become a tool for the distribution and promotion of tourist services, and therefore comprehensively contribute to the development of travel companies marketing.

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CONFLICT OF INTERESTS

None.

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Системи бронювання як інструмент маркетингу туристичних послуг

Анотація. Дослідження сучасних систем бронювання проведене для визначення їх ролі в індустрії туризму та для покращення розуміння засад маркетингової діяльності підприємств туристичної сфери. Стаття має на меті проаналізувати функціонування сучасних систем бронювання на ринку туристичних послуг, структурувати існуючі системи бронювання за рівнями функціонування та за каналами розподілу туристичного продукту. Основними методами наукового дослідження стали: хронологічний, системного дослідження, логічного аналізу, статистичний та структурного аналізу, які дали змогу у логічній послідовності, системно та структуровано дослідити сучасні системи бронювання та визначити їх ієрархію. Результатом дослідження стало обґрунтування та побудова ієрархії зв'язків на світовому ринку систем бронювання туристичних послуг, на основі масштабу охоплення туристичної сфери та каналів розподілу туристичних послуг. Загалом виділено 5 рівнів систем бронювання туристичних послуг у світі, найвищим з яких є глобальний, а найнижчий – це рівень колл-центрів постачальників туристичних послуг. Автори дійшли висновку, що сучасні системи бронювання є інструментом маркетингу туристичних компаній, які сприяють розподілу і просуванню туристичних послуг

Ключові слова: глобальні системи розподілу; онлайн туристичні агенції; туристичні послуги; канали розподілу; рейтинги

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The use of financial instruments: European experience and lessons for Ukraine

Abstract. This topic is relevant for the current study of the financial situation in general, and the derivatives market in particular. In this context, it is also important to outline the degree of state support for the development of the derivatives market, having previously identified the priority areas of state activity in this area. The current development of global financial markets indicates their growing efficiency and increasing role of international capital markets in attracting credit resources. The purpose of the article is to study, evaluate and analyze financial instruments, their impact on the national economy, as well as problems in the introduction of new financial instruments. The article summarizes and analyzes foreign experience in the use of financial instruments on the example of EU countries. The most effective methods of state regulation of financial instruments that can be applied in Ukraine are demonstrated. The dynamics of changes in financial instruments used in the Ukrainian financial market is investigated. The importance of using financial instruments in the Ukrainian economy is substantiated. The article identifies the most important problems and suggests methods and ways of more efficient functioning of the studied market. It is proved that to increase the country's competitiveness in the world financial market it is necessary to develop new financial instruments. The data on the use of financial instruments along with their grouping for 2013-2021 are systematized. It is necessary to further strengthen the tendencies of providing various types of financial support for regional development. In the future, it should also be taken into account that an indispensable condition for sustainable and effective regional development is institutional support, first of all, it is about regional development funds, which provides for an increase in the budgetary self-sufficiency of the regions. Thus, the coordinated activity of the financial system in a harmonious and professional combination of its functions is possible with the assistance of the state apparatus and a developed financial market

Keywords: market of derivative securities; derivative security (derivative); swap; option certificate; futures contract; EU countries; state regulation

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INTRODUCTION

The availability of financial instruments for regulating the national economy provides grounds for their more detailed study and determination of their beneficial impact on state's economy. In the post-crisis period, it is important to study the impact of stock market instruments on the national economy, which is the most attractive sector of the financial market for Ukrainian households. The global financialization, which appears in the growth of speculative trends in financial asset operations, has led to the emergence of new financial instruments. In context of Ukrainian economy reforming, subjects of the financial system are experiencing a shortage of resources; at the same time, the population and business entities have a significant amount of foreign exchange savings, which, if the financial market operates effectively, can be transformed into investment, and the financial instruments themselves must satisfy investors' to redistribute GDP and regulate the activities of business entities and households. In this regard, the government needs to pursue policies to promote the development of the domestic financial market, which will enable to overcome the shortage of capital in the national economy.

The rapid development of the financial market in the global context, active work of subjects of economic relations in the stock market and the desire to reduce risks have led to the emergence of derivative securities that help financial market participants to improve financial, monetary and commodity risk management and promote the development of financial innovations. Market instruments derivatives in economically developed countries are actively used to hedge and manage financial risks.

In today's conditions, it is absolutely obvious that Ukrainian researchers need to be aware of global trends and ensure that the development of the Ukrainian financial market conforms to global trends.

Among the scientific works on this research topic over the last 5 years, the following should be highlighted.

In particular, R. Brown & N. Lee (2018) investigated use of financial instruments in regional and local economic development.

O.V. Tretyakova *et al.* (2020) consider the main directions of modernization and development of the Ukrainian stock market.

O.V. Tymoshenko & L.O. Hudyma (2020) consider the main problems that stand in the way of improving the functioning of the stock market.

O.V. Yaroshevskaya (2020) classified the factors that stand on the way of the development of the derivative financial instruments market and are the reasons for insufficient involvement of investors in this segment of the national economy.

Art. 94 of Special Regulations for Trading in Financial Instruments, Savings and Investment Insurance separates and examines "Non-Complex Financial Instruments" and "Complex Financial Instruments" (ING Group, 2018).

Given the relevance of this topic, it is worth noting that the purpose of the article is to research, evaluate and

analyze financial instruments, their impact on the state of the national economy, as well as problems in the implementation of modern financial instruments.

LITERATURE REVIEW

First of all, it is important to note that the National Bank of Ukraine, as the central bank of Ukraine, defines the concept of financial instruments and indicates that financial instruments can be considered as securities, monetary instruments, futures and forward contracts, interest rate, currency and index swaps, options, which allow to sell or purchase any financial, including monetary instruments (currency and interest rate options) (Law of Ukraine No. 3480-IV..., 2006).

According to L.T. Byrne (2014) accounting standards for financial instruments needed a much more extensive remodeling.

R. Brown & N. Lee (2018) pay attention to the growing use of financial instruments in regional and local economic development. Researchers emphasize the importance of state and venture capital, government loans, and credit lines.

C.C. Ashford (2011) found that the discrepancy between the valuation of financial instruments at fair value and non-financial items based on historical value explains the existence of economic logic in establishing the boundary between financial instruments and non-financial items.

S. Adznan & S.P. Nelson (2014) expanded their study of the capital market. Scientists have found that modern changes in business settings direct companies to conduct business at the international level, and this, in turn, requires the use of financial instruments.

G.R. Stephen (2011), based on research on financial reporting for financial instruments, summarized empirical research on bank loan loss accruals, amortized and fair value measurement bases, balance sheet provision of financial instruments with concentrated risk, such as retained residual securities, disclosure information about risks, derivatives, and outlined future principles of empirical research on these issues (addresses the required disclosure of information about risk disclosures related to financial instruments in financial reports under GAAP and SEC rules).

According to the accounting standard in the European Union adopted in 2005 'financial asset' is any asset that is: a contractual right; equity instrument of another enterprise; cash; or a contract that will or may be settled by the entity's own equity instruments. But it should be noted that financial instruments also include risks, namely: inflation risk, currency risk, interest rate risk, market risk, counterparty risk, liquidity risk, country risk, law risk, settlement risk. Thus, financial instruments can be considered as contracts which lead to the emergence of a financial asset of one entity and an equity instrument or financial liability of another entity, and may be classified as primary financial instruments (such as equity securities, as well as payables or receivables) and derivative financial instruments (A guide to accounting for financial instruments in the public sector..., 2011).

According to European Union and the Committee of the Regions (2017) of financial instruments using has been increasing over the last two decades. A pioneer in Europe in using financial instruments was the UK, which introduced a rationalization of the public sector based on theories of allocative efficiency stemming from principal-agent theories by economists such as Stiglitz (1987).

According to the innovations, Member States and managing authorities have the possibility to apply FI to all thematic objectives covered by Operational Programs, as long as they are able to justify them to the Commission in the ex-ante assessment as stipulated in the regulations (International Financial Reporting Standards, 2018).

Concentration on local governance is a key issue in the Cohesion policy for 2014-2020. The main goal of this Program was to strengthen the independence of individual cities by allocating at least 5% of resources for the implementation of this system. These are, above all, demographic, ecological, climatic, social and economic challenges, which should have a significant impact on territorial municipalities, taking into account the need to promote stable links between the city and the countryside (European Union, 2015).

According to EU Cohesion policy legislative package 2021-2027 the €47.5 billion of additional resources will be made available from the EU Recovery Instrument, Next Generation EU. ERDF and CF funds will make 234 billion euros of investments in regional associations of the European Union (191 billion euros of ERDF and 43 billion euros of CF, respectively) (European Commission, 2020).

R. Roca *et al.* (2017) pay attention to the crisis of 2007-2008, and regard that too many difficulties in using of instruments of financial influence on the economy, as well as the opacity of setting prices on the financial market of securities as one of its main reasons, and subsequently, the various downturns in the economy caused a radical reduction in liquidity and a collapse in prices in the financial sector.

P. Vaičulis (2011) highlights the role of financial instruments used in the financial market of Lithuania, and also examines the most important parameters of the structure of financial instruments based on the study of comparative and historical data. Author argues that presently, the financial instruments used in Lithuania are equities, debt securities and derivatives and structure of investors has two groups – households and non-households.

D. Moravchykova *et al.* (2017) study the main aspects of innovation policy and technology transfer in the EU in general, and in Slovakia in particular in the period 2014-2020. First of all, the scientists described some legal and financial mechanisms for introducing innovations in this context. Also, the researchers point to the existence of some barriers, but also opportunities in the issue of introducing innovations and in the process of technology and knowledge transfer in the state economy. The authors also concluded that the European funds involved in the policy of support and implementation of the economic and social development programs of the European Union are divided

into: the European Regional Development Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development, the European Maritime and Fisheries Fund, the European social fund. The EU allocated a budget of 80 billion euros for the implementation of this program, which makes this project one of the most important financial initiatives of the EU. The peculiarity of this program is its novelty regarding the combination of a comprehensive innovation cycle, starting from fundamental and applied research through testing and demonstration activities, to the complete preparation of new products and their final placement on the market. The “Horizon 2020” program defined “International cooperation” as cooperation with non-EU countries. About 5% of countries outside the EU participated in this Framework Program, among which can be named: Brazil, China, Ukraine and the USA.

It should also be noted that to replace “Horizon 2020” a new EU initiative program “Horizon Europe” for the period 2021-2027 was adopted, which provides for an increase in funding for science, for which more than 1 trillion euro will be allocated.

The EU also adopted “A European Green Deal” with a budget of 1 trillion euros with the aim of turning Europe into the 1st climate-neutral continent in the world by 2050 (European Commission, 2014).

M.C. Huian (2015) concludes that the best tools to use for forecasting the market are precisely financial assets, compared to financial liabilities. The researcher also noted that when determining the price of shares of unprofitable companies, investors more often rely on non-financial liabilities European Union and the Committee of the Regions, and non-financial assets. In addition, when determining share prices, it is financial instruments that are more important.

According to statistics on financial instruments provided by European Parliament Commission in the period 2014-2020, the budget allocated almost 9 billion euros for the development of financial instruments, which is a significant amount compared to other expenditures in this area (European Union and the Committee of the Regions, 2017).

N. Dumitru (2017) explores the importance of financial instruments in the context of Cohesion policy for 2014-2020 and the goal of the EU’s “Europe 2020” strategy. The author points out that in the studied period, the EU allocated 351.8 billion euros to finance Cohesion policy, since this Program was considered as basis of the EU investment policy, since its goal was to involve all EU regions in the initiative to create new jobs, providing economic growth, improving the competitiveness of business, maintaining of sustainable development of the state economy in general, with the ultimate goal of improving the welfare of the population. Based on these statements, the scientist comes to the ING Group conclusion that it is financial instruments that are catalysts of public and private resources that can contribute to the achievement of strategic investments necessary for the implementation of the EU Strategies “Europe 2020” and “Horizon Europe”.

According to Art. 94 of Special Regulations for Trading in Financial Instruments, Savings and Investment Insurance, “Non-Complex Financial Instruments” are considered to be shares, bonds, money market instruments and other debt securities, while “Complex Financial Instruments” include securities that give the right to purchase or sell other securities by means of monetary settlement (ING Group, 2018).

T. Kornel (2020) describes the transformation of accounting concepts and its effect on fair value accounting for derivative financial instruments in the information economy. Given the fact that the business environment is extremely volatile, it should be taken into account that accounting information must be effective in order to achieve a financial state of business entities that is most in line with market requirements.

O.V. Tretyakova *et al.* (2020) consider the main directions of modernization and development of the Ukrainian stock market: corporate reform, improving the efficiency of issuer regulation, expanding tools in the stock market; stimulating the inflow of investment stock market; ensuring reliable and efficient functioning of market infrastructure; ensuring the functioning of a unified state policy to stimulate the improvement of the investment climate.

O.V. Tymoshenko & L.O. Hudyma (2020) studied the national stock market and found that it is inferior to other developed countries in terms of the level of capitalization of stock exchanges, and therefore needs auxiliary measures for its improvement. Researchers consider the main problems that stand in the way of improving the functioning of the stock market: lack of developed infrastructure, insufficient involvement of the state in solving this issue, underdeveloped legislation in this area and an inadequate level of transparency. To improve the securities market in Ukraine, the authors suggest taking measures to: overcome structural disparities in the economy; ensuring a high level of openness and transparency of the stock market; improvement and harmonization of legislation regulating the stock market.

O.V. Yaroshevska (2020) came to conclusion that the exchange segment of the market is characterized by greater capitalization and monopolization, compared to the over-the-counter segment. The author also proved on the basis of statistical calculations that the level of development of derivatives in Ukraine still remains insufficient. O.V. Yaroshevska (2020) classified the factors that stand on the way of the development of the derivative financial instruments market and are the reasons for insufficient involvement of investors in this segment of the national economy. First of all, it is about: inefficient demand; insufficient level of business activity due to lack of appropriate infrastructure; the fragmentation of national legislation and the absence of uniform, clearly defined rules for the functioning and state regulation of the market, a low level of protection of debtors and creditors in case of force majeure or other reasons for non-fulfillment of futures, forward or swap contracts; unclear mechanism of funds turnover; lack

of effective specialized clearing institutions. The author has proven that the derivatives market is a fairly effective tool for the functioning of the stock market, and therefore is an extremely promising market segment for Ukraine. The derivative securities market is associated with its significant potential for hedging the risks of buyers and sellers of underlying assets, which in the future will contribute to the development of economic support for financial and commodity markets.

Finally, according to classification of financial instruments of Valuation of Financial Instruments there are eleven basic financial instrument classes in Bloomberg: government and corporate bonds; mortgages; money markets instruments; municipal bonds; preferred instruments; equities (stocks, equity futures, equity options); commodities; indices; currencies; derivatives and structured notes (Valuation of financial instruments: Theoretical overview with applications in Bloomberg, 2017).

Questions about financial instruments using for stimulating regional development were considered by Ukrainian scientists such as A.V. Nechyporenko (2017), S.V. Shevchuk & B.Yu. Kotyk (2017), S. Danylina (2016), Ya.V. Petrakov (2016). However, new challenges in the development of the financial markets necessitate further search for effective financial instruments to stimulate national development, considering the experience of European countries. Thus, Authors have used the method of analyzing literature and bank materials related to the financial instruments.

MATERIALS AND METHODS

The study was conducted on the basis of data of statistical and graphical analysis.

The methodology used for the research includes the selection of information for the generalization and analysis of foreign experience in the use of financial instruments on the example of EU countries, as well as methods of state regulation of financial instruments that can be applied in Ukraine.

This study uses annual time series data (the trading volume on the stock market, the over-the-counter market trading volume, the trading volume, on the securities market, the trading volume in government bonds of Ukraine on the securities market, the trading volume in derivatives on the securities market) covering the period from 2013 to 2021 obtained from the National Securities and Stock Market Commission (National Securities and Stock Market Commission, n.d.).

The volume of trade transactions is the dependent variable in the study and indicates that the volume of trading on the securities market steadily increased in the period 2013-2016 and decreased in the period 2016-2021 (National Securities and Stock Market Commission, n.d.).

A study of the financial market of Ukraine, the state of the global financial assets market (bank deposits, government and private bonds and shares), and indicators of the European financial system was conducted.

The impact of the spread of COVID-19 on global markets was determined in the research process.

It is established how financial instruments in Ukraine can be studied on the basis of studying similar systems of financial instruments in the European Union, taking into account the fact that the Law of Ukraine No. 3480-IV "On Capital Markets and Organized Commodity Markets" (2006) is already in use in Ukraine, which defines the procedure for the use of financial instruments.

Actions aimed at obtaining new scientific results of the study involved the use of indicators of securities and shares of the market of Ukraine obtained on the basis of annual reports of the National Securities and Stock Market Commission of Ukraine for the period from 2013 to 2021 (National Securities and Stock Market Commission, n.d.).

The criteria for forming the sample were the study of the Ukrainian stock index, trading volumes on the stock market, volumes of corporate bonds, government bonds, shares, investment certificates and futures.

Taking into account the constant innovations in existing financial instruments and various types of index currency options, it was found that the best example of a positive foreign experience of financial market integration is the experience of the countries of the European Union, since financial instruments for stimulating the development of regions are used in almost all EU countries.

Thus, the experience of Germany, the Czech Republic, Slovenia, Sweden, the Netherlands, and Belgium in financing the economic development of regions, providing financial incentives, modernization and reconstruction of the production of new goods, development of regions with centralized state funding, stimulation of creation, modern reconstruction, reengineering and expansion of existing enterprises.

Derivatives are one of the most important modern instruments on the international financial market, and are the most dynamic segment of the securities market, and therefore this work is focused on the study of the derivatives market of Ukraine, where there are two types of these financial instruments, namely: option certificates and futures contracts.

It was revealed that although the derivatives market in Ukraine began to operate in 1995, in 2012 there was a sharp decrease in the volume of derivatives trading on the securities market, while in 2014 the maximum volume of trading was observed, and in 2020-2021 the volume of derivatives trading decreased, due to unstable socio-economic situation in Ukraine.

Since derivatives still hold a relatively small share of the total volume on the securities market along with other financial and economic instruments, the improvement of the derivatives market will positively affect the development of the domestic market, the financial system of Ukraine and the national economy as a whole.

RESULTS AND DISCUSSION

The modern development of world financial markets indicates their growing efficiency and increasing role of

international capital markets in attracting credit resources. Globalization processes of the last two decades contributed to the growing importance of the world capital market.

Global financial assets or assets of the banking industry (bank deposits, government and private bonds and shares) in 2018 amounted to 124 trillion dollars (European Central Bank Statistical Data Warehouse, n.d.). There are four main regions in the world financial market: the European Union (Eurozone countries), the United States, Great Britain and Japan, which account for more than 80% of the world's financial assets (European Central Bank Statistical Data Warehouse, n.d.). The value of assets of global financial institutions generally increased from 2002 to 2019, despite minor fluctuations. In 2019, the assets of financial institutions worldwide amounted to 404.1 trillion US dollars (Norrestad, 2021).

During the spread of COVID-19 around the world, prices of risky assets and commodities began to decline at an unprecedented rate, while gold and US Treasuries rose, according to the Global Financial Stability Report. As central banks responded with aggressive monetary easing, sovereign rates in several advanced economies fell to near zero, and government bond yields are now expected to remain low for even longer. Global emerging markets (excluding China) have also experienced changes in financial conditions, mainly due to a sharp increase in their external financing costs (International Monetary Fund, 2020).

A correct understanding of financial instruments in Ukraine can be made on the basis of studying the similar systems of financial instruments in the European Union. Despite the fact that the majority of bank deposits are preserved on the European financial market, there is also a rapid growth of corporate and state debt. In the conditions of instability of the main market parameters, the primary task is hedging risks and diversification of funding sources. Issuing bonds is one of the ways of alternative financing of companies, which is considered a non-inflationary method of financing the state budget deficit.

Since financial instruments have been of particular interest to the industry in recent years, first of all it should be noted that according to the Law of Ukraine No. 34-80-IV "On Capital Markets and Organized Commodity Markets" (2006), financial instruments can be defined as securities, term contracts (futures), term exchange contracts (on a certain date in the future) in the case of price dependence on an interest rate, exchange rate or stock index (interest rate, exchange rate or index), swaps, options giving the right to buy or sell any of these financial instruments, including those, which provide for the monetary form of settlements (exchange rate and interest options).

The following results for 2019-2021 should be noted (hryvnia to US dollar exchange rate is given as of 11/07/2022). In Ukraine, stock exchange trading in securities increased by 16.9% in 2019. So, in 2019, the total volume of trades was UAH 3,840,289,543.51 (USD 94,763,468.07) (National Securities and Stock Market Commission, n.d.).

In 2020, this indicator was UAH 2,414,629,934.76 (USD 59,583,712.15). In terms of the trading structure in 2020, the volume of corporate bonds was 2.04% of the total turnover or UAH 49.3 million (USD 1.2 million), government bonds – 88.70%, or UAH 2141.9 million (USD 52.8 million), shares – 8.25%, or 199.3 UAH million (USD 4.9 million), investment certificates – 0.28% or UAH 0.28 million (USD 0.0069 million), and by futures 0.72% or UAH 17.3 million (USD 0.41 million) (National Securities and Stock Market Commission, n.d.).

In 2020, the Ukrainian stock index (UX Index) increased by 6.48% from 1518.72 to 1617.08 points. The maximum value of this financial indicator during the trading session during 2020 was reached on December 30 at 1651.85 points (an increase of 8.77% since the beginning of the year), and the minimum value was 1234.93 points (a decrease of 18.69% since the beginning year). Trading

volumes on the stock market of Ukraine in 2020 amounted to UAH 600 billion (USD 14.8 billion) (National Securities and Stock Market Commission, n.d.).

In the trading structure for January 2021, corporate bonds accounted for 10.71% of the total volume of turnover or 20,887,568.68.62, 78.22% of government bonds or 152,5148,818.55.55, 10.17% of shares or 19,823,671.93, for investment certificates for 0.43% or 843,630,630,630.03, and for futures 0.47% or 914,500 UAH (USD 22.57 billion) (National Securities and Stock Market Commission, n.d.).

In January, the Ukrainian stock index (UX Index) increased by 2.99% from 1617.08 to 1665.46 points. On 05/28/2021, the UX index reached a maximum of 1965.7 points, which indicated the positive state of the stock market of Ukraine, after 07/01/2021, a decrease in this financial indicator was observed (on 07/27/2022, the UX index was 1718.5 points) (Fig. 1, Fig. 2) (National Securities and Stock Market Commission, n.d.).



Figure 1. Volume of trades on the securities market in 2013-2021, UAH billion

Source: developed by the authors based on National Securities and Stock Market Commission (n.d.)



Figure 2. Volume of trades on the securities market in 2013-2021, USD billion

Source: developed by the authors based on National Securities and Stock Market Commission (n.d.), Hryvnia to US dollar exchange rate is given as of 11/07/2022

The volume of trading on the securities markets steadily increased in the period 2013-2016 and decreased in the period 2016-2021 (Fig. 1, Fig. 2), as the stock market of Ukraine is primarily negatively affected by the lack of competitiveness, tax regulation and development of the state's stock market infrastructure, as well as the imperfection legislation of Ukraine in this area. Therefore, foreign experience in this field is extremely important for the Ukrainian economy.

In global financial markets, there is constant innovation in existing financial instruments, such as convertibles and dual-currency bonds.

There are different types of index currency options: heaven and hell bond (Japan) – the principal amount of such a bond is tied to one currency, but denominated in another; inflation-indexed bonds (Great Britain) – the principal debt of such bonds is indexed depending on the level of inflation; equity Linked term notes (USA) – security provides fixed income; and bear bonds – types of bonds whose payments depend on the value of individual shares.

The best example of a positive foreign experience of financial market integration is integration within the European Union, which is characterized by an increased role of commercial banks, a high degree of transparency of capital markets and a variety of regulatory structures.

It should be noted that financial instruments for stimulating the development of regions are used in almost all EU member states.

The analysis of the German experience of financing the economic development of regions should begin with the consideration of the regional development strategy. The purpose of the main tool for the implementation of the regional development strategy “Improving the Regional Economic Structure” is to create conditions in weak regions for their self-development by accelerating investment activities and creating highly competitive enterprises.

The Czech experience is also important for Ukraine. Financial support instruments for the regions of the Czech Republic include subsidies, low-interest loans, and loans for the development of priority areas. Attracting investments to the industries and regions of the Czech Republic involves the systematic use of certain tools, namely: subsidies for the creation of new jobs, tax breaks, as well as the transfer of land for rent for a small fee.

Similar to the Czech Republic, Slovenia also provides financial incentives, among which the most important can be highlighted, namely: investment transfers to municipalities; subsidies to companies for initial investment and provision of expanded employment opportunities; loans to municipalities for co-financing projects to update and increase the efficiency of economic and market infrastructure; loans and guarantees for agricultural enterprises; investing in selected projects that are of key importance for the state's economy; transfer of state capital to expand joint investment in regional and local self-government development projects.

As for Sweden, in this country it is regional firms that focus on modernization and reconstruction of the production of new goods, as well as support small and medium-sized enterprises, which receive primary financial incentives.

It is also appropriate to consider the experience of the Netherlands in this area, where there are five regional development organizations with centralized state funding. The main goal of these companies is to modernize the economic structure of regional development and focus on unemployment problems. These organizations promote and stimulate the development of regional financial opportunities and connections between local and national industry, as well as provide assistance to small and medium-sized businesses.

And finally, overview of the activities of regional investment companies in Belgium can be considered. In this country, such companies, first of all, use incentives for the creation, modern reconstruction, reengineering and expansion of already operating enterprises, or contribute to the creation of new state-owned firms. There are also companies in the country that specialize in regional development, namely: managing regional data banks, supporting the interests of key regional industries, and participating in the anti-crisis management of certain firms that take the most important places in creating the national GDP (Nechyporenko, 2017).

Therefore, financial instruments are extremely important components of the modern financial and economic world. So, first of all, it should be noted that a popular financial instrument in the world with an average daily trade volume of more than 9 trillion dollars is a derivative. Nevertheless, the derivatives market is a relatively young segment of the financial market of Ukraine.

There are two types of derivatives on the Ukrainian stock market today, namely: option certificates and futures contracts. Futures contracts without a currency offer are the most common type of financial instrument. Other instruments include: stock indices, interest rates of the underlying asset (commodity); call options on the underlying asset.

It is important to emphasize that derivatives are one of the most important modern tools in the international financial market, and the derivatives market itself is the most dynamic segment of the securities market (Shevchuk & Kotyk, 2017).

It should be noted, that according to the Law of Ukraine “On Capital Markets and Organized Commodity Markets”, derivatives are those securities whose issue and volume limits are related to the right to buy or sell securities, other financial and/or commodity resources within the term established by law (Law of Ukraine No. 3480-IV, 2006).

However, in Ukraine, the derivatives market began to operate in 1995. During this period, there is a number of problems regarding the operation of this financial instrument, namely: insufficient information and training of economic agents regarding the use of derivatives as well as absence of appropriate legislation on the regulation of the sphere of operation of derivative financial instruments.

In the context of recent years, it should be noted that in 2012 there was a sharp decrease in the volume of derivatives trading on the securities market, while in 2014 the maximum volume of trading was observed (UAH 9.6 billion or USD 221.1 million), and in 2020-2021 the volume of trading in derivatives decreased to UAH 2.02 billion or USD 49.1 million (Fig. 1, Fig. 2). The main reason for such significant decline was the unstable socio-economic situation in Ukraine (National Securities and Stock Market Commission, n.d.).

Hence, having outlined the main problems of the use of derivatives and having studied the experience of some developed countries of the world of these securities market, it is appropriate to note that derivatives still occupy a relatively small share of the total volume on the securities market, along with other financial and economic tools. In this context, it is expedient to: improve and expand the legal framework regarding operations with derivative securities; create an educational infrastructure for studying the specifics of the use of derivatives, and, at the same time, pay special attention to the role of hedging in the process of reducing financial risks; apply international experience and, in particular, the experience of the European Union countries in managing and regulating operations with derivatives; provide consultations to real and potential buyers of derivatives (Danylina, 2016).

It is also worth noting that the improvement of the derivatives market has a positive effect on the development of the domestic market, the financial system of Ukraine and the national economy as a whole. In Ukraine, there is no single law that would regulate the system of derivative financial instruments. The regulation, issue and circulation of derivatives is based on the requirements of the Tax Code of Ukraine, the Civil Code of Ukraine, the Laws of Ukraine "On Capital Markets and Organized Commodity Markets" and "On State Regulation of the Securities Market in Ukraine". A draft of the Law of Ukraine "On Derivative Financial Instruments" has also been developed, which defines the main types of instruments, derivatives market participants, its regulation and supervision by state authorities. Its adoption will ensure the further development of the derivatives market, the influx of investments into the state's economy, the emergence of high-yield hedge funds, trade transparency, and the dynamic development of the entire economy (Petrakov, 2016).

Also, on August 16, 2020, the Law of Ukraine "On Amendments to Certain Legislative Acts of Ukraine on Simplifying Investment Attraction and Introducing New Financial Instruments" became effective. This document introduces a wide range of reforms in the capital market, including a derivatives reform, a corporate bond reform and the implementation of the EU Directive /2014/65 of May 15 on markets in financial instruments (MiFID II) (Law of Ukraine No. 738-IX, 2020).

In Ukraine, the issue of attracting financial assets to the state's economy, particularly in the financial sphere, remains

debatable. Therefore, the study of the experience of developed countries in attracting and using external financial resources is important for the creation of highly competitive enterprises. Summarizing the foreign experience of attracting and using financial assets in different countries allows to determine the key processes of movement of financial instruments. In the context of intensifying investment activity, Ukraine needs to: develop and implement a long-term state program to increase the level of the country's investment attractiveness, within which it is necessary to provide support and encouragement through the introduction of benefits and guarantees at the national and regional levels; introduce strict control over possible shadow flows that are taken out of the country and those that come from offshore territories, and minimize corruption schemes that prevent the adequate functioning of the country's financial sphere; hold consultations with foreign investors on the issue of improving the legal framework for investment activities and business conditions in Ukraine. Implementation of the above proposals should help increase the attractiveness of the state's economy for investment and attract significant FDI for the formation of effective and reliable economic resources.

CONCLUSIONS

Summarizing the study of the development and some achievements in the derivative securities market of Ukraine, it is worth noting that for effective further development, the market of Ukrainian financial instruments needs constant state support. Taking this into account, the priority areas of state activity in this area should be: state financial support for the activities of non-governmental financial organizations, promotion of expanded access to global financial market instruments; constant active participation in the process of joint coordination of financial-economic and tax-regulatory policy, as well as the definition and establishment of uniform standards of state regulation, management and influence on the securities market with the aim of implementing European and world standards in this area, the protection of national interests as the ultimate goal of which should have been the transition to EU standards in this field, as one of the conditions for acquiring full membership into this economic and political union.

Consequently, special attention should be paid to those types of aid that relate to improving the business environment and stimulating investment activity. It is necessary to continue strengthening the trends of providing various types of financial support for regional development. In the future, it should also be taken into account that institutional support is an indispensable condition for sustainable and effective regional development, primarily, it is about regional development funds, which involves increasing the budgetary self-sufficiency of regions.

Thus, through participation in the negotiations on carbon regulation, Ukraine actively cooperates with the EU innovation project "European Green Deal", the main goal

of which is the introduction of innovations that do not harm the environment.

Although the legislation of Ukraine shows prospects for further development and improvement in the financial sector, first of all, taking into account the experience of the leading countries of the European Union, as well as due to the adoption of a number of laws and consideration of bills (proposed legislation), it is necessary to take into account the fact that derivatives are one of the most important modern tools in the international financial market, which is why it should be noted that derivatives in Ukraine still occupy a relatively small share of the total volume on the securities market.

Therefore, it is possible to formulate advices for Ukraine taking into account the European experience, namely: self-development by accelerating investment activities and creating highly competitive enterprises; the use

of financial support tools for regions, including subsidies, low-interest loans and loans for the development of priority areas; provision of financial incentives, investment transfers to municipalities for co-financing projects to renew and improve the efficiency of economic and market infrastructure; allocation of loans and guarantees for agricultural enterprises; financial support for the modernization and reconstruction of the production of new goods; using incentives for reengineering and expansion of existing enterprises or promoting the creation of new state-owned firms.

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CONFLICT OF INTERESTS

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Застосування фінансових інструментів: Європейський досвід та уроки для України

Анотація. Дана тематика є актуальною для сучасно дослідження фінансового становища загалом, і ринку похідних цінних паперів зокрема. У цьому контексті також важливо окреслити ступінь державної підтримки розвитку ринку похідних цінних паперів, попередньо визначивши пріоритетні напрями державної діяльності у цій сфері. Сучасний розвиток світових фінансових ринків вказує на їх зростаючу ефективність та збільшення ролі міжнародних ринків капіталу у залученні кредитних ресурсів. Метою статті є дослідження, оцінка та аналіз фінансових інструментів, їх вплив на стан національної економіки, а також проблем у впровадженні новітніх фінансових інструментів. У статті узагальнено і проаналізовано іноземний досвід застосування фінансових інструментів на прикладі країн ЄС. Продемонстровано найефективніші методи державного регулювання фінансових інструментів, які можна застосувати в Україні. Досліджено динаміку зміни фінансових інструментів, які застосовуються на українському фінансовому ринку. Обґрунтовано важливість використання фінансових інструментів в економіці України. У статті визначено найважливіші проблеми та запропоновано методи та шляхи ефективного функціонування досліджуваного ринку. Доведено, що для підвищення конкурентоспроможності країни на світовому фінансовому ринку необхідно розробляти новітні фінансові інструменти. Систематизовано дані щодо використання фінансових інструментів поряд із їх групуванням за 2013-2021 рр. Необхідно і надалі посилювати тенденції надання різних видів фінансової підтримки регіонального розвитку. У подальшому слід також враховувати, що неодмінною умовою стійкого та ефективного регіонального розвитку є і інституційне забезпечення, насамперед, йдеться про фонди регіонального розвитку, що передбачає підвищення бюджетної самозабезпеченості регіонів. Отож, саме злагоджена діяльність фінансової системи у гармонійному і професійному поєднанні її функцій можлива за сприяння державного апарату і розвиненого фінансового ринку

Ключові слова: ринок похідних цінних паперів; похідний цінний папір (дериватив); своп; опціонний сертифікат; ф'ючерсний контракт; країни ЄС; державне регулювання

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Accounting outsourcing as a tool for optimising the company's activities

Abstract. In modern conditions, cost minimisation for business entities is the main condition for existence in the market. One of the tools for such minimisation is outsourcing accounting. In addition to minimising costs, accounting outsourcing ensures the correctness of accounting, provides high-level advice, and protects against possible fines. The purpose of the study was to investigate accounting outsourcing as a tool for optimising the activities of entities in modern business conditions. The study applied methods of induction and deduction, cause-and-effect communication, tabular and graphic methods, description and concretisation, and logical generalisation. A single definition of the concept of accounting outsourcing was developed, which revealed the characteristic features of outsourcing. The SWOT analysis of accounting outsourcing services demonstrated accounting outsourcing as an effective tool for minimising costs. It is determined that all shortcomings and threats can be eliminated with careful selection of an outsourcer and signing a contract. The stages of accounting for accounting outsourcing consist in developing a document flow schedule that would ensure timely receipt of information for the customer and quality control of the services provided. A unified methodology for determining the economic effect of accounting outsourcing is proposed, which considers the disadvantages and advantages of existing methods, which would allow revealing the economic, organisational, and managerial aspects of outsourcing accounting. The main proposals received by the author based on the findings of the study can be used in accounting based on outsourcing. Further study of the problems of outsourcing as a tool for optimising the activities of enterprises in Ukraine should be directed to the development of laws and regulations to encourage companies to make managerial decisions regarding the use of accounting outsourcing

Keywords: business entity; accounting services; SWOT analysis of services; contract; accounting; performance evaluation; economic effect

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INTRODUCTION

For business entities, the field of accounting outsourcing is relatively modern. The development of accounting outsourcing is delayed by an insufficient level of development of theoretical provisions, imperfect regulatory and practical implementation in the activities of companies. Imperfect development of the principles of the actual organisation of accounting when using outsourcing as a tool for optimising the activities of enterprises determined the relevance and purpose of the study. To resolve these issues, it is necessary to develop ways to use outsourcing, depending on the specifics of the company's activities and the application of accounting.

Accounting based on outsourcing should implement all tasks and functions delegated by the business entity, meet the needs of the customer and the contractor on the main developed regulatory legal acts and contractual regulation of this process. This determines the need to analyse the theoretical, methodological, organisational, and practical foundations of accounting when applying outsourcing.

Recently, it has become relevant in Ukraine to attract accounting outsourcing specialists for accounting purposes. Accounting outsourcing is one of the most effective ways to optimise the costs of enterprises, especially in the context of a pandemic. Accounting outsourcing for business entities is a positive solution, since there is an opportunity to save money on maintaining their own accounting department, obtaining a higher quality of service, and concentrating the saved funds to solve key tasks and business processes.

Theoretical, organisational and methodological foundations of accounting outsourcing, the issues of transition to accounting outsourcing and the feasibility of this event are considered by many researchers, as they are acute and widespread problems in this area. In particular, a significant contribution was made by: P. Adasiuk & O.V. Martyniuk (2021), K.V. Burko (2021), T.M. Sierikova *et al.* (2021), O.M. Romashko *et al.* (2021), S.M. Pylypenko *et al.* (2021), N.I. Kolinko & G.M. Volianyuk (2021), R.R. Ivasyk & R.F. Brukhanskyi (2020), N.O. Loboda *et al.* (2020), H.S. Kesarchuk (2020), W. Cai *et al.* (2020), A. Asatiani *et al.* (2019), A. Chen & J. Gong (2019), R. Chychyla *et al.* (2019), O.A. Toporkova & L.O. Nesvit (2019), O.O. Kakhovych & D.V. Kolisnyk (2019), A.P. Yaroshyna & I.M. Burdenko (2018), N.V. Pryimak (2018), Y. Gao & T. Driouchi (2018), *et al.* However, despite the substantial research, it is still necessary to investigate the essence of accounting outsourcing as a tool for optimising costs, developing and improving laws and regulations on outsourcing activities, searching for methods and approaches to evaluating the effectiveness of accounting outsourcing, stages of accounting and documentation of accounting outsourcing, and the feasibility of switching to outsourcing.

The purpose of the study is to investigate accounting outsourcing as a tool for optimising the activities of business entities in the current economic environment.

The goal included the following tasks:

- describe the concept of accounting outsourcing and form the author's definition of accounting outsourcing;
- substantiate the main types and features of accounting outsourcing;
- conduct a SWOT analysis of accounting outsourcing services;
- determine the most optimal contract structure for full or partial transfer of accounting functions by a specialised company;
- identify accounting features for outsourcers and customer enterprises;
- analyse existing approaches to evaluating the effectiveness of accounting and determine a single formula for calculating the economic effect of accounting outsourcing.

LITERATURE REVIEW

I.P. Adasiuk & O.V. Martyniuk (2021) conducted a SWOT analysis of accounting services outsourcing, which systematised the available information about its strengths and weaknesses, including potential opportunities and threats operating on the market from the outside.

K.V. Burko (2021) notes that accounting outsourcing is one of the modern methods of accounting, which provides for the signing of a contract, the absence of burdensome financial investments, economic threats, and insurmountable forces. Well-organised accounting will enable business entities to critically evaluate their activities, analyse business processes, reduce costs, free up time and resources, and allow the company to gain competitive advantages.

In the study by O.O. Kakhovych & D.V. Kolisnyk (2019), the main condition for making a decision on switching to accounting outsourcing is to assess the effectiveness of its use. This approach must necessarily be applied considering the specifics of the enterprise and take into account cost savings.

G.S. Kesarchuk (2020) notes that for a perfect organisation of accounting, it is necessary to draw up a document flow plan, which will indicate the procedure for processing documents and their receipt in the accounting department, entering them in the accounting programme, entering information in accounting registers, and transferring them to the archive. In addition, to organise a clear document management system, it is necessary to indicate employees who were related to certain works at each stage.

N.I. Kolinko & G.M. Volianyuk (2021) divide outsourcing into production (production of products, production of components) and outsourcing by industry: IT services, logistics, marketing services, accounting, administrative functions, legal services, etc.

Y. Gao & T. Driouchi (2018) recommend evaluating the effectiveness of outsourcing at the stage of intent to switch to accounting services, calculating efficiency based on the comparability of the cost of independent accounting and the cost of servicing by an outsourcing company. In addition, the authors developed a system of indicators for

evaluating the work of an outsourcing company in the process of direct cooperation. These indicators allow assessing the quality of service and the performance of all assigned functions under the accounting service agreement.

A. Asatiani *et al.* (2019) studied the theoretical part of accounting outsourcing, namely: the definition of the concept of "accounting outsourcing", its types, development factors, advantages and disadvantages, classification features.

S.M. Pylypenko *et al.* (2021) note that the economic impact of accounting outsourcing is the ratio of the cost of maintaining accounting independently to the total cost of using accounting services. The use of accounting outsourcing as a management tool is effective for understanding the following conditions: to understand the essence of such a concept, its features and purpose of application, to be able to effectively apply outsourcing, and to have a clear method of calculating costs in accounting by an outsourcing company.

T.M. Sierikova *et al.* (2021) investigate the stages of obtaining accounting outsourcing services: conclusion of an agreement on the provision of outsourcing services for accounting, transfer of primary documents, analysis and entry of primary documents into the accounting programme, reflection in the accounting of all business operations provided for in the contract, formation of financial results, preparation and submission of reports.

O.A. Toporkova & L.O. Nesvit (2019) note that accounting outsourcing is a service that involves performing complex accounting tasks by competent companies that can help with problems and assess opportunities for improving the competitiveness of enterprises. The services provided by the outsourcing company include: verification of received primary documents and their reflection in the accounting system, preparation and submission of financial and statistical reports, development of accounting policies, banking services, etc.

A.P. Yaroshyna & I.M. Burdenko (2018) define approaches to the definition of the concept of "outsourcing": functional-oriented, cooperative, managerial, and instrumental. Typical reasons for using outsourcing are identified: increasing the income of business entities, improving the quality of services provided, reducing costs, and developing business. In addition, the study pays attention to the types of accounting outsourcing, highlighting the following: accounting consulting, selective outsourcing, full outsourcing, accounting on behalf of the chief accountant.

Despite the conducted scientific research, the issue of defining the concept of "accounting outsourcing", analysis, development and improvement of the regulatory framework for regulating accounting outsourcing at the state level, search for methods and methodological approaches to assessing the economic effect of accounting outsourcing, modernisation of accounting support methods based on outsourcing, expediency of using accounting outsourcing as an optimisation of the enterprise's activities, which contributed to the choice of the research topic, should now be disclosed.

MATERIALS AND METHODS

When conducting the research, general scientific research methods were used to reveal theoretical issues, methods and organisation of accounting on the basis of outsourcing. Methods of induction and deduction are used to investigate the theoretical part; analysis and synthesis – to determine the algorithm for choosing an outsourcing company; the comparison method – to conduct a clear analysis of the advantages and disadvantages of accounting outsourcing; the causal relationship method is used to investigate the classification features of accounting outsourcing; the system method – to substantiate the features of the organisation of accounting for the customer and the outsourcer; the tabular method – for structuring the information under study; the graphical method – for presenting and detailing the algorithm and stages of accounting outsourcing; descriptions and concretisation – for documenting synthetic and analytical accounting; formalisation method and factor analysis – for evaluating the effectiveness of accounting outsourcing; SWOT analysis – for scientific reflection of all advantages, disadvantages, opportunities and threats; logical generalisation – for summing up results. At the empirical level, the information material was analysed and survey materials of specialists working in the field of outsourcing were collected.

The proposed methodology for evaluating the effectiveness of accounting outsourcing is based on the implementation of a certain sequence of stages that consider the accumulated experience in the field of organising the transfer of accounting to outsourcing in commercial companies, the disadvantages and advantages of existing methods, and the reliability of indicators calculated when transferring accounting to outsourcing, which would allow fully considering all the economic, organisational and managerial aspects of outsourcing accounting, determine the effectiveness of this event, and highlighting the areas for further control over the process of outsourcing accounting services provided by third-party organisations.

The theoretical and methodological basis of the study is the papers by Ukrainian and international researchers on accounting outsourcing and evaluation of the effectiveness of accounting outsourcing, practical Ukrainian and international experience in the development and application of accounting outsourcing, materials of scientific and practical conferences on the development of theoretical and organisational and methodological foundations of accounting outsourcing organisations and the feasibility of using accounting outsourcing, legislative and regulatory acts that control the order of organisation and maintenance of accounting, Internet resources, and statistical data.

Main stages of study:

- investigation of the theoretical part of accounting outsourcing: definition of the essence of the concept of "accounting outsourcing", customers of accounting outsourcing services, types of accounting outsourcing, types of work that accounting outsourcing includes, conducting SWOT analysis;

- analysis of the organisational part of accounting outsourcing: determination of the algorithm for choosing an outsourcer company, criteria for choosing an outsourcer, points that should be present in the accounting outsourcing contract, a scheme of stages of accounting outsourcing implementation;
- research of the methodological part of accounting outsourcing: determination of the stages of primary, current, and final accounting, features of tax burden optimisation for the customer;
- investigation of approaches to evaluating the effectiveness of accounting outsourcing: determination of methodological approaches to evaluating the effectiveness of

outsourcing and accounting outsourcing, a list of costs that the customer can save when using outsourcing services, developed the original formula for calculating the economic effect of accounting outsourcing and the calculation procedure.

RESULTS AND DISCUSSION

The concept of “outsourcing” is an abbreviation of the phrase “outer source using” and means “use of external resources” (Kolinko & Volianyk, 2021).

There are many opinions regarding the definition of the term “accounting outsourcing”, in particular, they can be structured according to the approaches: functional, managerial, and instrumental (Table 1).

Table 1. Structuring the term “accounting outsourcing” by approaches

Author	Definition	Approaches
Anthony Chen & James Jianxin Gong (2019)	Accounting outsourcing is a method of ensuring the activities of business entities with the delegation of accounting authority to the outsourcer on a contractual basis	Functional
K.V. Burko (2021)	Accounting outsourcing is a relatively new and effective way to maintain accounting on a contractual basis with savings of own funds, without potential economic threats and unpredictable human and external factors	
N.V. Pryimak (2018)	Accounting outsourcing is a means of ensuring the functioning of a company, in which the right to maintain accounting is transferred to another company that has the authority to do so	Managerial
R R. Ivasyk & R.F. Brukhanskyi (2020)	Accounting outsourcing – combined accounting services for the customer company by experienced specialists of the outsourcing company	
A.P. Yaroshyna & I.M. Burdenko (2018)	Accounting outsourcing is a means of strengthening the competitiveness of business entities by centralising the enterprise to perform key functions and business processes	Instrumental

Source: developed by the authors

After the investigation of the theoretical provisions of accounting outsourcing, the authors’ definition of the term accounting outsourcing is developed – it is a tool for optimising the company’s activities, which involves delegating part or all of the accounting authority to the outsourcer, which would help save costs, reduce potential risks and threats, and strengthen competitiveness on contractual grounds.

Outsourcing companies include consulting, audit, and other specialised business entities (directly outsourcing firms, entrepreneurs providing accounting services, etc.) (Ivasyk & Brukhanskyi, 2020).

A customer is a business entity that transfers part or all of its accounting responsibilities. In the field of outsourcing, a special definition of “outsourcing” or a general definition of the customer enterprise is used for this subject (Ivasyk & Brukhanskyi, 2020).

Customers of accounting outsourcing services include:

- business entities that have a small volume of operations and/or carry out the same type of activity;
- newly created businesses;
- private entrepreneurs;
- public sector enterprises;
- agricultural enterprises;

- parent and subsidiary companies;
- business entities that have seasonal activities or cover several types of activities;
- representative offices in Ukraine;
- other business entities (Kolinko & Volianyk, 2021; Ivasyk & Brukhanskyi, 2020).

For newly created, small and medium-sized enterprises, it is effective to use accounting, since it is possible to transfer all accounting functions to an outsourcer. This process would ensure correct accounting from the first day of registration and provide an opportunity to receive consultations. In addition, it will provide high-quality service with the lowest costs for accounting (Toporkova & Nesvit, 2019).

Types of accounting outsourcing include:

- providing accounting advice is advisable when there is a need to monitor the activities of the full-time accounting department, and to resolve disputes;
- incomplete outsourcing – transfer of several separate types of work for an outsourcing accounting firm: personnel accounting, warehouse accounting, accounting for non-current assets, etc.;
- full outsourcing – transfer of all types of work for accounting by an outsourcing firm. With this type of outsourcing, there is no need to maintain an accounting department;

• accounting by an outsourcer as a chief accountant is the transfer of the right to sign documents on accounting and tax accounting (Yaroshyna & Burdenko, 2018).
To choose the right type of accounting outsourcing, it

is necessary to analyse the specifics of the company's activities, its financial capabilities, and the degree of readiness to switch to remote accounting services. Classification features of accounting outsourcing are shown in Table 2.

Table 2. Classification features of accounting outsourcing

Classification attribute	Type
By the period of providing outsourcing services	- short-term outsourcing (the term of interaction between the customer and the outsourcer is less than one year); - long-term outsourcing (the term of interaction between the customer and the outsourcer is more than one year).
By the scope of assigned functions	- incomplete (conducting several types of work by an outsourcing firm); - full (full accounting service).
Methods of cooperation between the customer and the contractor	- remote (interaction between the customer and the contractor using communication tools); - stationary (interaction between the customer and the contractor takes place through personal meetings and through communication tools).
Boundaries of the contractor's location	- Ukrainian outsourcer (territorial placement in the same state as the customer of these services); - international outsourcer (territorial placement in different countries with the customer of these services).
By the volume of tasks performed	- standard outsourcing; - advanced outsourcing.
By the territory of accounting	- external; - internal.
By the number of participants in the chain of services provided	- cross-section; - direct.

Source: developed by the authors based on Burko (2021), Cai *et al.* (2020), Pryimak (2018)

Accounting outsourcing includes the following types of work:

- registration of a newly created company;
- consulting on accounting and taxation issues;
- providing recommendations on the correct preparation and completion of financial documentation;
- preparation and maintenance of primary documentation;
- maintaining personnel records;
- payroll calculation and payment services;
- preparation and submission of financial, tax, and statistical reports;
- partial or full accounting;
- filling in accounting registers;
- restoration of primary documents and registers for the past period;

- keeping records of material assets, inventory and finished products;
- working with software;
- accounting for non-current assets;
- other types of work that are defined in the contract and depend on the specifics of the company's activities (Sierikova *et al.*, 2021; Ivasyk & Brukhanskyi, 2020).

One of the tools for studying accounting outsourcing from different angles is SWOT analysis, which identifies strengths and weaknesses, opportunities and threats. SWOT analysis consists of a clear formulation of information about external forces, trends and obstacles in the market, and the main areas of market development through the systematisation of available information (Table 3).

Table 3. SWOT analysis of accounting outsourcing services

Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Economic feasibility, cost reduction of the customer's enterprise. Focus of the customer company on its core business. 2. High level of professionalism of service accountants. 3. Independence and objectivity of accounting. 4. Continuity of accounting. 5. For the customer – the financial responsibility of the outsourcer. 6. Constant opportunity to get advice. 7. Distribution of risks between the service customer and the contractor. 8. Improving the quality of accounting information. 9. Reducing the risk of penalties for incorrectly prepared financial statements or late submission. 10. Tax optimisation. 	<ol style="list-style-type: none"> 1. Imperfect legal framework for outsourcing. 2. Inability to plan long-term accounting costs (the cost of services depends on many factors, in particular, the volume of services received, pricing methods, etc.). 3. Non-transparent algorithm for calculating the cost of services (often unreasonably high). 4. Lack of control over the outsourcer. 5. Financial responsibility of the outsourcer. 6. Low degree of trust in a third-party partner. 7. Lack of efficiency. 8. Dependence on the outsourcer.

Table 3, Continued

Opportunities	Threats
<ol style="list-style-type: none"> 1. Minimisation of risks, avoiding risk. 2. Strengthening the strategic security of the customer's enterprise. 3. Growth of investment attractiveness of the customer's enterprise. 4. Improvement of business efficiency. 5. Professional development of personnel. 6. Access to new knowledge and technologies. 7. Additional access to financial resources 8. Transfer of responsibility for performing specific functions 9. Independent performance of individual accounting functions that are not outsourced. 10. Getting related services. 	<ol style="list-style-type: none"> 1. Maintaining confidentiality. Information leakage due to unprofessionalism or dishonesty. 2. Loss of control by the customer over its own resources. 3. Unexpected termination of the contract, failure to fulfil the terms of the contract, unwillingness of the outsourcing company to review the cost of the contract, bankruptcy of the outsourcing company. 4. The customer's desire to get cheap services can lead to cooperation with an outsourcer who has a low level of professionalism of specialists. 5. Loss of attention to the customer due to a large number of customers. 6. Risk of an increase in the price of services. 7. Discrepancy between the quality of services and their cost. 8. Fraud and hidden costs. 9. Lack of professional experience among outsourcer employees.

Source: compiled by the authors based on Adasiuk & Martyniuk (2021)

The conducted SWOT analysis shows that attracting an outsourcing company for accounting has more advantages and opportunities than disadvantages and threats. It is also important to note that with careful selection of an

outsourcing company, it is possible to eliminate almost all the disadvantages and risks (Adasiuk & Martyniuk, 2021). The following algorithm can be proposed for choosing an outsourcing company (Fig. 1).

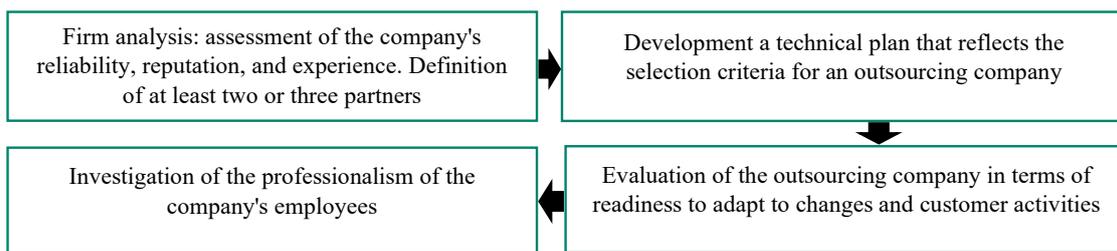


Figure 1. Algorithm for choosing an outsourcing company

Source: developed by the authors based on Asatiani et al. (2019), Pryimak (2018)

The main criteria for choosing an outsourcer include: the time of existence of the company in the market, the rating of the company in the industry, the number of clients, the implementation of relations with clients, the level of software equipment, the availability of certificates, certification documents, awards, the package of services provided by the company, the cost of services, etc. (Asatiani et al., 2019).

The accounting procedure of an outsourcing company must meet the needs of the customer and the contractor for the main contractual regulation of this process and perform all tasks and functions assigned to it.

Accounting outsourcing contract is a certain range of responsibilities of the contractor and the customer of outsourcing services, which is based on the rights and obligations to perform the tasks or functions assigned to it by the outsourcer to meet the needs of the customer (Asatiani et al., 2019).

According to the contract, the customer transfers or undertakes to transfer for a certain period of time its authority for partial or full accounting by an outsourcing company that has software and qualified personnel for this, and

the outsourcer undertakes to provide accounting services and/or advice for a certain fee (Burko, 2021; Yaroshyna & Burdenko, 2018).

The points that should be included in the accounting outsourcing agreement include:

- the terms of the agreement are specifically defined: full list of services, price and scope of services, payment terms, start and end dates of the agreement;
- customer's wishes regarding the qualification of outsourcer personnel;
- list of responsibilities of the contractor and the customer;
- specified software that will be used to provide accounting services;
- procedure and terms for reporting to an outsourcer for accounting services rendered;
- liability of the parties for violation of the deadlines for providing documents and other information that is necessary for the provision of services;
- liability of the parties for disclosure of confidential information;

- outsourcer's responsibility for the quality of work performed;
- procedure for actions and compensation of losses in case of early termination of the agreement;

- appendix to the agreement-document flow schedule (Ivasyk & Brukhanskyi, 2020; Asatiani *et al.*, 2019).
- The stages of outsourcing accounting are shown in Figure 2.

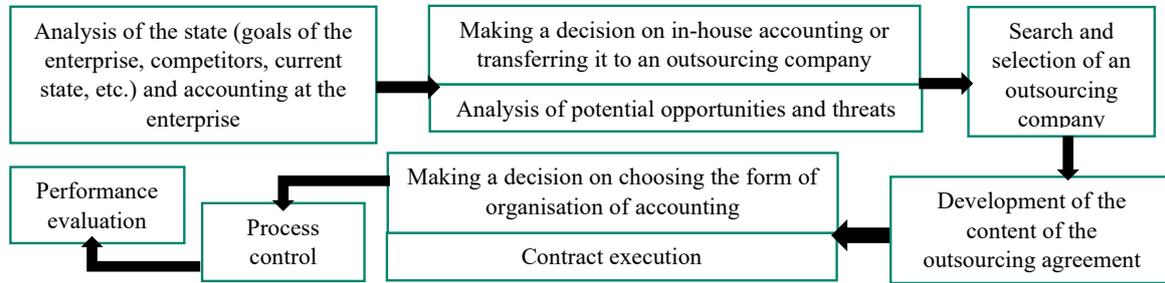


Figure 2. Scheme of stages of accounting outsourcing implementation

Source: compiled by the authors based on Gao & Driouchi (2018)

Therefore, attracting an outsourcing company for accounting has more advantages and opportunities than disadvantages and threats. With careful selection of an outsourcing company, it becomes possible to eliminate all shortcomings, and when signing an accounting outsourcing agreement, it becomes possible to prevent possible risks.

When organising accounting, attention should be paid

to the procedure for the conditions and parts of building the accounting process to obtain relevant, reliable, and timely information about the company's activities.

The accounting process of an outsourcing enterprise contains the following stages: primary, current, and final. Primary accounting is the process of collecting information, i.e., recording it in certain documents (Table 4).

Table 4. Stage of initial accounting of accounting outsourcing

No.	Document name	Information displayed in the document
1	Agreement on the provision of accounting services	Confirms the legal obligation of the parties to fulfil the terms of the agreement: their rights, obligations, and responsibilities
2	Certificate of services rendered	Reflects the fact of performing the service and specific types of services, indicating their cost, volume, and term of execution
3	Electronic tax invoice	Reflects the accrued VAT liability in the cost of accounting outsourcing services
4	Bank statement	Provides information about the receipt of funds from the customer for the services provided
5	Document flow schedule	Diagram or list of work on creating, verifying, processing, and transmitting documents
6	List of accepted and submitted documents	Displays information about the list of documents in the process of cooperation between the customer and the outsourcer
7	Characteristics of accepted and submitted documents	Confirms the fact of accepting documents in the course of cooperation, indicating their form and method of transfer
8	Log of registration of characteristics of accepted and transmitted documents	Provides systematic registration of all received and submitted characteristics of accepted and transmitted documents

Source: compiled by the authors based on Chychyla *et al.* (2019)

The application of the above documents and a properly drawn up schedule of document flow between the outsourcer and the customer enterprise would ensure timeliness and efficiency in obtaining information for the customer's management decisions and the ability to control the quality of services provided and assigned functions to the outsourcing company (Chychyla *et al.*, 2019).

Current accounting ensures the preparation and recording of documents in accounting registers. The stage of current accounting for accounting outsourcing is shown in Table 5.

Final accounting generates reporting indicators for a certain period. The final accounting stage of accounting outsourcing is shown in Table 6.

Table 5. Standard correspondence of accounts for accounting for accounting outsourcing operations from the executing company and the customer company

No.	Primary document	Operation content	Typical correspondence	
			Debit	Credit
Accounting with the executing company				
1	Certificate of services rendered	Recognition of income from the provision of accounting and taxation services	361.1	703.6
2	Electronic tax invoice	Accrual of a VAT liability	703.6	641
3	Bank statement	Crediting funds to the current account in national currency from the customer company	311	361.1
Accounting with the customer company				
1	Certificate of services rendered	Recognition of expenses when receiving accounting and taxation services	92	631
2	Electronic tax invoice	Accrual of a VAT tax credit	641	631
3	Bank statement	Transfer of funds to a current account in the national currency to an outsourcer	631	311

Source: compiled by the authors based on Instruction of the Ministry of Finance of Ukraine... (1999)

Table 6. Final accounting stage of accounting outsourcing

Type of reporting	Reporting form	Line code	Paper title	Information displayed in the line
Financial statements	Balance sheet (statement of financial position), Form No. 1	1,125	Accounts receivable for products, goods, works, and services	Debt of buyers or customers for the services provided to them, adjusted for the allowance for doubtful debts
		1,615	Accounts payable for goods, works, and services	Reflects the amount of debts owed to suppliers and contractors for material values, services rendered and works performed
	Statement of financial results (statement of comprehensive income), Form No. 2	2,000	Net income from sales of products (goods, works, services)	Income (revenue) from sales less indirect taxes and fees paid from turnover and other deductions
		2,050	Cost of products sold (goods, works, services)	Reflects the cost of the service sold
		2,130	Administrative expenses	Reflects expenses related to the management and maintenance of the business entity
		2,180	Other operating expenses, (%)	Amount of other expenses business entity, which are not included in administrative documents
	Cash flow statement (using the direct method), Form No. 3	3,000	Receipts from product sale (goods, works, services)	Reflect the amount of cash receipts from operating activities
		3,100	Spending on payment for goods, works, and services	Reflects the amount paid for material values, services rendered, and work performed
		3,105	Spending on labour remuneration	Displays the amount paid for work performed, sick days, vacations, benefits, bonuses, etc.
		3,110	Spending on social event deductions	Show the amount of SSC paid
	Statement of equity, Form No. 4	4,100	Net profit (loss) for the reporting period	Indicates the amount of net profit or loss for the reporting period
	Notes to the annual financial statements, Form No. 5	470	Fines, penalties, and forfeitures	Detailed information about fines, penalties, and forfeitures incurred
		940	Accounts receivable for goods, works, and services	Displays information about accounts receivable by date of occurrence

Table 6, Continued

Type of reporting	Reporting form	Line code	Paper title	Information displayed in the line
Tax reporting	Income tax return	01	Income from any activity (net of indirect taxes) determined in accordance with the accounting rules	Shows net income from the sale of services
	Value added tax return	1.1.	Transactions taxed at the basic rate	Data on transactions taxed at the basic rate are provided
		4.1	Accrued tax liabilities for operations taxed at the basic rate	The amount of the tax liability accrued during the reporting period for transactions taxed at the basic rate is indicated
		10.1	Purchase (manufacture, construction, development, creation) of goods/services and non-current assets in the customs territory of Ukraine at the basic rate	The volume of purchase (manufacture, construction, development, creation) of goods, services, and non-current assets with VAT is reflected

Source: developed by the authors based on Chen & Gong (2019), Order of the Ministry of Finance of Ukraine No. 433 (2013)

In addition, the final stage of accounting outsourcing includes a worksheet on the volume of services provided by the outsourcer, which contains information about the types of work, their volume, deadlines, employees who were involved, and a summary of services provided by the outsourcer, reflecting information on the results of services provided and responsibilities performed in accordance with the contract, in addition, recommendations are provided for optimising the tax burden.

Analysis of Table 5 and Table 6 suggests that the use of accounting outsourcing has features at the stage of optimising the tax burden for the customer:

- the cost of providing accounting services by outsourcing firms is an item of expenditure in the financial statement (statement of comprehensive income), line 2,130, which, in turn, will reduce the taxable profit of the customer (if he is on the general tax system);
- the cost of providing accounting services by outsourcing firms includes value-added tax, which, in turn, provides a tax credit to the customer and reduces its tax liability (if the parties are value-added tax payers).

Taxation of accounting outsourcing activities depends on the chosen tax system of a legal entity or individual:

- simplified taxation system: single tax payers of the third group – the company is required to pay 5% of the single tax from the income received;
- general system of taxation on net profit, the company is required to pay 18% of income tax.

Thus, the main document for regulating cooperation between an outsourcer and an outsourcer when using accounting outsourcing services is an accounting service

agreement. The details, content and composition of the costs of such a contract are the key to high-quality and timely provision of services, as well as the fulfilment of the obligations of both parties.

A problematic point in cooperation between an outsourcer and an outsourcer is the lack of documentation of the performance of functions related to the proper organisation and maintenance of accounting. To solve the problem, it is proposed to use a package of documents in the initial and final accounting, which would ensure control over the timeliness of the tasks set, namely: an agreement on the provision of accounting services, an act of services rendered, an electronic tax invoice, a bank statement, a document flow schedule, a list of accepted and transferred documents, characteristics of accepted and transferred documents, a log of the characteristics of accepted and transferred documents, a worksheet on the volume of services provided by the outsourcer, and a summary of services provided by the outsourcer.

Ukrainian and international researchers have paid considerable attention to approaches to assessing the economic efficiency of outsourcing and accounting outsourcing, which indicates the lack of a unified methodology for calculating the economic effect in studies.

The analysis of approaches to evaluating the effectiveness of outsourcing and accounting outsourcing has shown that the basis of approaches is costs. In more detail, interaction on the terms of accounting outsourcing is considered successful and effective, provided that the customer manages to save the cost of implementing this business process.

Table 7 analyses methodological approaches to evaluating the effectiveness of outsourcing and accounting outsourcing.

Table 7. Methodological approaches to evaluating the effectiveness of outsourcing and accounting outsourcing

Equation name	Equation	Symbols
Efficiency of outsourcing use	$E_f = \frac{E_i}{E_o} \cdot 100\%$	E_f – efficiency of outsourcing use in the enterprise, %; E_i – expenses for self-accounting; E_o – the customer's expenses when maintaining accounting records by an outsourcer.

Table 7, Continued

Equation name	Equation	Symbols
Feasibility of outsourcing	$C + A_i > E_c + E_o$	The cost of maintaining accounting independently (C) and additional income (A_i) is compared with complex current expenses (E_c) and expenses (E_o) when maintaining accounting by an outsourcer
Forecast economic effect of outsourcing	$E_{an}^i = (C_n^i - C_{af}^i) + S_n^i + I_n^i$	C_{Cn}^i – the calculated amount of in-house accounting, considering possible fines and failures; C_{af}^i – cost of providing accounting services by outsourcing firms; S_n^i – calculated amount of savings at the beginning of the billing period; I_n^i – calculated net profit at the beginning of the billing year from the sale or lease of property that is released when using outsourcing.
The actual economic effect of outsourcing	$E_{af}^i = (C_{cn}^i - C_{af}^i) + S_f^i + I_f^i + P^i$	C_{Cn}^i – the calculated amount of in-house accounting, considering fines and disruptions; C_{af}^i – cost of providing accounting services by outsourcing firms; S_f^i – actually calculated amount of savings at the end of the billing period; I_f^i – actually calculated net profit at the end of the billing year from the sale or lease of property that is released when using outsourcing; P^i – profit received as a result of performing work that has become likely to be attracted while saving outsourcing costs.
Outsourcing feasibility ratio	$C_e = \frac{I_{mst}}{I_{msw}} \cdot I_{mst} = \frac{SD \cdot Wt}{100 \times \sum_{i=1}^t (R_{ai} + P_{ai})} \cdot I_{mst}$ $\cdot I_{pco} = \frac{SD \cdot Wt}{100 \times \sum_{i=1}^t (R_{oi} + P_{oi})}$	C_e – coefficient of feasibility of switching to outsourcing; I_{mst} – index of market stability of a construction enterprise including outsourcing; I_{msw} – index of market stability of a construction enterprise without including outsourcing; S – annual product sales; D – share of net profit from sales; W – the probability of success of a business transaction, which varies within the success scale (from 0 to 1); t – duration of the billing period for performing a business transaction; R_a, R_o – future expenses for conducting a business transaction; P_a, P_o – total possible market losses, including and excluding outsourcing.
Outsourcing performance ratio	$D = X \cdot \frac{Z+K}{T} - A \cdot K_p$	D – outsourcing performance ratio; X – stipulated labour costs of the employee, h; Z – monthly salary value; K – overhead costs for maintaining one workplace; T – working hours per month; A – the cost of providing accounting services by outsourcing firms; K_p – threat coefficient
Threat level when applying accounting outsourcing	$R = \sum_{i=1}^n P_i \cdot C_{vi}$	R – threat level when using accounting outsourcing; P_i – possibility of a threat at the enterprise; C_{vi} – level of total costs that the company can receive when there is a threat of outsourcing; n – the number of outsourcing threats that may appear in the process of cooperation.

Source: developed by the authors based on Gao & Driouchi (2018), Yaroshyna & Burdenko (2018)

The main indicator that the customer of outsourcing services needs to rely on is the economic effect. This indicator consists in determining the amount that an enterprise will save when maintaining accounting records by an outsourcing company in comparison with the cost of independent accounting (Toporkova & Nesvit, 2019).

To calculate the economic effect of accounting outsourcing, the condition of equality of the parties must be met, which consists in:

- calculation of total costs and losses of the parties in accounting outsourcing and possible changes in the field of activity;

- performing cost and total analysis over several different time periods;
- assessment of the costs incurred and results obtained from outsourcing services for the entire period of its use;
- accounting for threats that arise during the interaction of the contractor and the customer and the possibility of their occurrence (Gao & Driouchi, 2018).

The list of expenses that the customer can save when using outsourcing services includes: wages to the accounting department, payroll tax and a single social contribution, other expenses related to payroll (bonuses, sick leave,

vacation pay, etc.), office supplies, utility costs and other expenses for maintaining accountants' jobs (Toporkova & Nesvit, 2019).

After the analysis of approaches to determining the effectiveness of accounting outsourcing, it can be argued that there is no single answer to the question of which method is the most effective. The choice of method, first of all, depends on the specifics of the company's activities and the intention to switch to outsourcing.

Insufficient development of theoretical and practical generalisation regarding the assessment of the economic effect of accounting served the need to develop a single formula based on the cost method and with the help of which it is possible to calculate the amount of savings when using accounting outsourcing. After a detailed analysis of Table 7, the author's equation for calculating the economic effect of accounting outsourcing is as follows (1):

$$E_f = (E_i - (C_o + E_o)) \cdot n \cdot i, \tag{1}$$

where E_f – economic effect of accounting outsourcing, UAH; E_i – expenses for maintaining accounting records independently, UAH; C_o – the cost of providing accounting services by outsourcing firms, UAH; E_o – expenses of the customer when maintaining accounting records by an outsourcing company, UAH; n – the period of accounting by an outsourcing company, the number of months; i – inflation rate, %.

To calculate the economic effect of accounting outsourcing, it is necessary to:

- calculate the total amount of all expenses related to the maintenance of your own accounting department;

- analyse the cost of accounting by outsourcing companies and calculate their average cost;
- calculate the amount of the customer's expenses when maintaining accounting records by an outsourcer;
- determine the accounting period for an outsourcing company;
- investigate the current year's inflation rate.

An example of calculating the economic effect of accounting outsourcing after switching to accounting services by an outsourcing firm using the above equation is shown in Table 8. The example considers a business entity, a legal entity, a VAT payer, with employees, and an average volume of operations. For such an enterprise, it is calculated that there are two accountants: the chief accountant and the primary documentation accountant. To do this, the study examined the average cost of maintenance in companies that provide accounting services, have an average price range, a personal website, and a good business reputation for 2021. In addition, the amount of the average salary of chief accountants and other expenses for the maintenance of their own accounting department (office, rent, utilities, etc.) for 2021 was analysed. During the calculation, the authors included the following information:

- expenses for maintaining accounting independently (average salary of the chief accountant, and expenses for maintaining the accounting department) – 35,000.00 UAH (Official website Work.ua., 2022);
- expenses of the customer when maintaining accounting records by an outsourcer company – 1,200.00 UAH;
- the accounting period for an outsourcing company is 12 months;
- the inflation rate is 110.0%.

Table 8. Calculating the economic impact of accounting outsourcing

No.	Indicator	Company 1	Company 2	Company 3	Company 4	Independent accounting management
1	The cost of providing accounting services by outsourcing firms, UAH	5,000.00	6,000.00	5,500.00	7,000.00	-
2	Expenses of the customer when maintaining accounting records by an outsourcing company, UAH	1,200.00	1,200.00	1,200.00	1,200.00	-
3	Total accounting expenses, UAH	6,200.00	7,200.00	6,700.00	8,200.00	35,000.00
4	Term of accounting by an outsourcing company, number of months	12	12	12	12	-
5	Inflation rate, %	110.0	110.0	110.0	110.0	-
6	Economic impact of accounting outsourcing	380,160	366,960	373,560	353,760	-

Source: calculated by the authors

Calculating the economic effect of accounting outsourcing determines the amount of significant cash optimisation after switching to accounting services by an outsourcer. The maximum economic effect among comparable companies is observed in Company 1.

In its activities, the company chooses an outsourcing company not only for its pricing policy, but also for its reputation, personnel experience, software, communication, etc. However, based on the pricing policy, the lowest economic effect, i.e., the lowest maintenance costs, is in Company 1.

CONCLUSIONS

The study yielded scientific results of theoretical, organisational, and practical nature.

Based on the analysis of research papers, approaches to the definition of the concept of “accounting outsourcing” are systematised, in particular: instrumental, functional, and managerial. In order to eliminate differences in the definition of “accounting outsourcing”, the author’s concept is proposed, which reveals the main purpose of outsourcing.

The classification features of accounting outsourcing are ordered and their types are clarified, which are determined by the originality of the company’s activities, its financial prospects and intention to switch to accounting outsourcing according to the following features: the period of providing outsourcing services, the volume of assigned functions, methods of cooperation between the customer and the contractor, the boundaries of the location of the executing company, the volume of tasks performed, the territory of accounting, the number of participants in the chain of services provided.

The SWOT analysis of accounting outsourcing services shows a significant level of advantages and opportunities, although it has some disadvantages and threats. When choosing an outsourcing company, it is necessary to follow the following algorithm:

- analyse the company: determine its level of reliability, reputation, and work experience;
- select the selection criteria: work experience, employee qualifications, form of payment, type of taxation, etc.;
- assess the partner’s readiness to adapt to the specifics of the company’s activities;
- investigate the professionalism of the partner company.

If this algorithm is followed and an accounting outsourcing agreement is signed, where considerable attention is paid to the interaction between the parties, the range of issues for cooperation is specifically defined, it is possible to eliminate all shortcomings and threats.

The most optimal contract structure for full or partial transfer of organisation and accounting functions is determined, which provides for determining the main

agreements and wishes of the customer to the level of qualification training of the contractor’s employees. In addition, it is necessary to focus on cooperation between the customer and the contractor, namely: determine the scope of responsibilities, draw up a schedule of document flow and the procedure for reporting the outsourcer, the levels of responsibility of both the customer and the outsourcer, and the procedure for compensation of losses and the procedure for early termination of the contract.

In order to improve the document management system, the sequence of outsourcing accounting is proposed at the following stages: analysis of the state and accounting at the enterprise; making a decision on its own accounting or transferring to an outsourcing company; analysis of potential opportunities and threats; search and selection of the contractor; processing the text of the accounting outsourcing agreement and signing it; determining the form of accounting organisation and implementation of agreements under the agreement; monitoring the process; performance evaluation. In addition, each stage of accounting is analysed in detail, namely: primary, current, and final. It is determined that with the correct design of the document flow schedule, the efficiency of work between partners increases and ensures the smooth operation of all works.

To make a decision by the customer whether it is more profitable to maintain the accounting service, or to outsource accounting to the company, a methodological analysis of evaluating the effectiveness of outsourcing and accounting outsourcing was carried out. It is determined that when determining the economic effect, it is necessary to apply the calculation method based on the totality of all expenses incurred. The analysis of the economic effect assessment determined the feasibility of switching to outsourcing accounting and significant cash optimisation.

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CONFLICT OF INTERESTS

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Бухгалтерський аутсорсинг як інструмент оптимізації діяльності підприємства

Анотація. В сучасних умовах мінімізація витрат для суб'єктів господарювання є основною умовою існування на ринку. Одним з інструментів такої мінімізації є ведення бухгалтерського обліку на засадах аутсорсингу. Окрім мінімізації витрат, бухгалтерський аутсорсинг забезпечує правильність ведення бухгалтерського обліку, надає консультації на високому рівні та вберігає від можливих штрафів. Метою роботи було дослідити бухгалтерський аутсорсинг як інструмент оптимізації діяльності суб'єктів за сучасних умов господарювання. У процесі дослідження авторами були використані методи індукції та дедукції, причинно-наслідкового зв'язку, а також табличний та графічний, методи опису та конкретизації, логічного узагальнення. Було сформовано єдине визначення поняття бухгалтерського аутсорсингу, який виявив характерні риси аутсорсингу. Проведений SWOT-аналіз послуг бухгалтерського аутсорсингу продемонстрував бухгалтерський аутсорсинг як дієвий інструмент мінімізації витрат. Визначено, що всі недоліки та загрози можливо усунути при ретельному відборі аутсорсера та підписанні договору. Етапи ведення обліку бухгалтерського аутсорсингу полягають у розробці графіку документообігу, який забезпечить своєчасність при одержанні інформації для замовника та контроль якості наданих послуг. Запропоновано єдину методику визначення економічного ефекту бухгалтерського аутсорсингу, яка враховує недоліки та переваги вже існуючих методик, що дозволить повною мірою врахувати всі економічні, організаційні та управлінські моменти передачі бухгалтерії на аутсорсинг. Основні пропозиції, одержані автором за результатами дослідження, можуть бути використані при веденні бухгалтерського обліку на засадах аутсорсингу. Подальше дослідження проблем аутсорсингу як інструменту оптимізації діяльності підприємств в Україні доцільно спрямувати на розробку нормативно-правових актів для заохочення до прийняття управлінських рішень компаніями стосовно використання бухгалтерського аутсорсингу

Ключові слова: суб'єкт господарювання; бухгалтерські послуги; SWOT-аналіз послуг; договір; облік; оцінка ефективності; економічний ефект

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Management of social intelligence in the context of developing citizen's patriotism

Abstract. The study examines the possible influence of social intelligence on the development of such a civic sense as patriotism. The full-scale aggression against Ukraine, which began on February 24, 2022, clearly demonstrated the relevance of patriotic education of young people, which is reflected not only in the performance of military duty, but also in active volunteering and support for the national idea in the media space, that is, the development of information security of the state. The purpose of the study is to identify the influence of social intelligence on feelings of patriotism. The study was conducted among students of colleges and universities in Poltava. To determine the level of social intelligence of young people, the TROMSØ rapid test developed by Norwegian researchers was used. Using this method, it was possible to obtain the necessary data for conducting a correlation analysis of social intelligence with a sense of patriotism. The experiment revealed a significant influence on patriotism of such components of social intelligence as social information processing, social skills, and social awareness. The development of a certain value system among young people under the influence of social intelligence, which increases the sense of patriotism, is one of the main possible explanations for such results. The development of social competence among students contributes to strengthening the economic, political and social security of the state. Further study of practical mechanisms for developing the social intelligence of young people would certainly strengthen the state in the face of potential future challenges and contribute to ensuring stable economic development

Keywords: social competencies; social consciousness; social skills; personnel security; soft skills; social activity; economic security

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INTRODUCTION

The beginning of 2022 demonstrated the importance of the responsibility of Ukrainian citizens and their patriotism for ensuring the economic and social security of the state, preserving its territorial integrity and developing national consciousness. Russia's full-scale military aggression against Ukraine clearly emphasised the need for patriotic education of young people, which is reflected not only in the performance of military duty, but also in active volunteer activities and support for the national idea in the media space, which leads to the strengthening of information security of the state. In addition, the patriotic attitude of the people has a positive impact on the economic and personnel security of the state, since Ukrainians prefer the Ukrainian manufacturer, and pay attention to local employers. According to the authors of this study, the fostering of patriotism among students is a prerequisite for the development of a stable national economy. Therefore, special attention should be paid to the ideological and cognitive components of a person's mental activity, which contribute to more effective socialisation.

From these positions, it is relevant to identify those components of the psyche that motivate a person to fulfil their duty to the country, in order to identify them and develop proposals for further formation, management, and strengthening. At the beginning of the study, it was suggested that one of these factors may be developed social intelligence, which helps a person to better integrate into society, form an adequate worldview, and be aware of the most important rules and norms of behaviour.

Preliminary research by I.K. Liadskyi (2022) concerned the study of the influence of social intelligence on the development of soft skills. It demonstrated the presence of a statistically significant direct moderate relationship between the development of social awareness of a person and their motivation for self-development. From these positions, the correlation between social intelligence and patriotism of a citizen seems objectively likely, since this trait is a kind of quintessence of human socialisation. The premise of this assumption was the systematic observation of the behaviour of people who are distinguished by a well-developed social intelligence and demonstrate respect and responsibility to their own people.

The complexity of the study lies in the fact that the issue of social intelligence is mainly considered in psychology, to a lesser extent in pedagogy, and is almost not raised in the field of management, although it is most relevant for managing people. This situation is caused by the lack of a clear and structured model of social intelligence, so each researcher adapts it to their own concept that is convenient for them personally (Bonesso, 2019). There are at least ten approaches to defining the essence of social intelligence: behavioural, cognitive, cognitive and verbal, communicative, communicative and personal, operational, structural and dynamic, cognitive and behavioural, systemic, psychometric, professionally oriented, etc. (Lyubochkina, 2017). The authors of the study took as a basis the psychometric

cognitive and behavioural aspect of social intelligence, which can be involved in managerial decisions.

The main tasks and purpose of the study are related to identifying the influence of social intelligence and a sense of patriotism among young people. Establishing a link between them would help better understand the mechanisms of forming respect for their people and the country, and will provide an additional tool for strengthening Ukraine's economic and social security.

LITERATURE REVIEW

One of the first to study social intelligence was the American psychologist Edward Lee Thorndike, who in 1920 defined this phenomenon as the ability to "succeed in interpersonal relationships, to lead others" (Develi, 2022). Since his study was published in the non-scientific journal "Harper's Journal" there is reason to believe that the discoverer of social intelligence was another scientist, Harry Barnes, who used this term in 1926 in his monograph "History and social intelligence" (Mateyuk, 2021). In general, the beginning of the 20th century is characterised by a rapid increase in the interest of the global scientific community in the cognitive and behavioural characteristics of a person, from the standpoint of educating a harmoniously developed personality as an effective employee and a conscious citizen (Hoseini, 2020).

Since then, in addition to theoretical generalisation, researchers have tried to develop a qualitative system for testing this component of human mental abilities. For example, the tests of J. Washington (GWIST), J. Guilford and M. O'Sullivan (Four Factor Test of Social Intelligence), and others have been created and are actively used (Gupta, 2021). But all of them have several common drawbacks, namely, they are labour-intensive, difficult to apply, and have a low level of correlation. Researchers continue to search for more effective and universal ways to assess the level of social intelligence, one of which was the TROMSØ test. It was developed by Norwegian scientists D. Silvera, M. Martinussen & T. Dahl, who, in turn, relied on the studies by O. John & K. Kosmitsky (Silvera, 2001). These authors identified three basic components of social intelligence: *Social information processing*, *Social skills*, and *Social awareness*. The developers of the test started with 103 statements, the number of which in the final version was reduced to 21, which, according to scientists, most meaningfully reveal the level of development of human social intelligence, while not overloading both the process of providing answers and their analysis.

Another component of the study is a sense of patriotism and its possible dependence or relationship with social intelligence. This is important in several ways. First, patriotic citizens increase the security of the state. Patriotism is an integrating basis for the revival of the spiritual values of society, it is a stabilising factor of national and civil harmony in independent Ukraine (Polulyashchenko, 2020). Patriotic people tend to invest their own money in

solving current social problems (Richey, 2022). An example of the current situation is the so-called donation for the needs of the Armed Forces of Ukraine. Secondly, a person who is distinguished by respect for their own state is potentially inclined to loyalty to the national producer (Osaula, 2022). This is extremely necessary from the standpoint of strengthening the competitiveness of domestic enterprises. One of the studies showed the motivation of patriotic youth to get an education, find employment, and plan their professional career in Ukraine. In addition, M. Rupa *et al.* (2021) demonstrated the tendency of patriotic citizens to respect and comply with social norms and rules. In other words, they show increased awareness of various issues related to the implementation of recommendations and instructions on the part of the authorities. In particular, a positive correlation was established between constructive patriotism and social responsibility of citizens in relation to preventive measures that restrained the spread of the COVID-19 pandemic. But there is a downside to this. According to the study by O.V. Starynska (2021), extended quarantine restrictions reduce the level of social intelligence in young people. Therefore, higher education institutions should pay special attention to maintaining social competence among students during such periods, considering its impact on active citizenship.

The social and economic security of the country, in particular, business and the public sector, directly depends on the level of patriotism of citizens. In addition, people with advanced social intelligence show a desire to improve the world around them (Freeman, 2020). Identifying any ways to strengthen it is an extremely urgent task for modern Ukraine, as it will contribute to increasing the social, industrial, and creative activity of citizens (Shevchenko, 2019).

MATERIALS AND METHODS

The survey was conducted on two independent samples of respondents. The first group – students of Poltava colleges (179 people), namely, a Separated Structural Unit “Agrarian-Economic Professional College Poltava State Agrarian University”, SSU “Professional College of Management, Economics and Law of Poltava State Agrarian University”, and Poltava Polytechnic Professional College, a Separated Structural Unit of National Technical University “Kharkiv Polytechnic Institute” (hereinafter – colleges). The second group included students from Poltava higher education institutions (104 people), namely Poltava State Agrarian University (PSAU), Poltava University of Economics and Trade (PUET), and Poltava V.G. Korolenko National Pedagogical University (PNPU).

The study used the standard model of the TROMSØ test, which consists of 21 questions distributed among the three basic components of social intelligence. The developers of this test are D. Silvera, M. Martinussen & T. Dahl (2001) indicate acceptable internal reliability of the indicators Social information processing = 0.81, Social skills = 0.86, and Social awareness = 0.79 according to Cronbach's coefficient alpha. There is also an approximately uniform distribution of them when determining the level of social intelligence,

which does not require the introduction of additional coefficients. In order not to burden respondents with the same type of questions, they were presented randomly, and not sequentially for each block.

10 points of the TROMSØ questionnaire are formulated in a positive context, and 11 in a negative context, which requires their coding. This was implemented intentionally by the test developers to reduce the likelihood of bias in responses. The score on the scale involved summing up the points for each factor and dividing the sum by the number of items to get the score. A high score from the respondent indicates the ability to correctly assess social situations and phenomena, the presence of developed communication skills. Each response was rated by the respondent on a scale from 1 to 7, where the first mark corresponds to the statement “Not about me at all”, and the seventh mark corresponds to the statement “Completely about me”.

Block 1. Processing of social information

1. “I can predict other people's behaviour.”
3. “I know how other people will feel after my actions.”
6. “I understand other people's feelings.”
9. “I understand other people's desires.”
14. “I can often understand what others want without even asking them.”
17. “I can predict how others will react to my behaviour.”
19. “I can often understand what others really mean by their facial expressions and body language.”

Block 2. Social skills

4. “I often feel insecure when surrounded by new people I don't know.”
7. “I adapt easily to different social situations.”
10. “I quickly navigate new situations and meet new people.”
12. “I find it difficult to build relationships with other people.”
15. “It takes me a long time to understand other people well.”
18. “I'm good at choosing the right words when talking to new people.”
20. “It's hard for me to find an interesting topic to talk about.”

Block 3. Social awareness

2. “I often feel like I find it hard to understand other people's choices.”
5. “People often surprise me with their actions.”
8. “Other people are angry with me, but I'm not sure why.”
11. “People often get angry or annoyed when I say what I think.”
13. “I find people unpredictable.”
16. “I often insult others without realising it.”
21. “I am often surprised by the reaction of others to what I do.”

According to a similar assessment system, questions were added that concerned students' awareness of their own patriotism, understanding its importance in their personal and professional lives:

22. “How often do you participate in volunteer activities (in particular, aimed at the needs of the Armed Forces of Ukraine)?”

23. “Do you transfer funds for the needs of the Armed Forces of Ukraine?”

24. “Do you support the Armed Forces of Ukraine in other effective ways (reposts of patriotic publications, calls for help to the military, etc.)?”

The survey was conducted online using a questionnaire created in a Google form. The results were processed using the Microsoft Excel software suite. To establish the relationship between the two variables, Spearman’s rank correlation coefficient was used, according to the recommendations of V.F. Bosniuk (2020), where X (independent variable) is social intelligence and its components, and Y (dependent variable) is patriotism. Correlation indicators were interpreted in accordance with the recommendations of U. Turan (2020) on the Cheddock scale, which can be used to determine the strength of the relationship between two variables: 0.1-0.3 – weak; 0.3-0.5 – noticeable; 0.5-0.7 – moderate; 0.7-0.9 – high; 0.9-1.0 – very high.

RESULTS AND DISCUSSION

The study revealed a statistically significant noticeable positive relationship between social intelligence and the level of patriotic attitude of students, and their positive attitude to volunteer activities and support for the national idea in the media space, which affects the development of information security in Ukraine. These results are consistent with the findings of other studies that have tested the relationship between social intelligence and developed empathy and the desire to do volunteer work. For example, the study by L. Onufriieva *et al.* (2020) suggests that the level of development of social intelligence determines such personal qualities as social sensitivity, social perception, social thinking, empathy, and reflection. It is established that social intelligence is a component of the communicative and reflexive component of students’ psychological readiness for volunteer activities.

The close relationship between social intelligence and empathy was also revealed by A. Rahim (2018). Patriotism does not arise by itself – it is fostered by the family, society, and then the personal consciousness of a person. This process takes place at different levels: from the general, state to personal, internal, and is closely related to the ability to empathise. Patriotism is a complex social feeling, and it is not always unambiguous. However, a country, especially in times of armed aggression, cannot survive unless a critical mass of people experiences this feeling. The development of patriotism has always been the main task for any country. The proven connection between social intelligence, self-control, and gratitude, as shown in the study by L. Gulliford (2019), opens up another aspect of possible influence on patriotism, namely, gratitude to one’s own people and country.

An interesting aspect of this problem is the adaptive nature of social intelligence, which contributes to the harmonious integration of a person into society. According to the survey results shown in Tables 1 and 2, students develop the right social attitudes much earlier than they start active civic life. A positive link was found between social intelligence and a sense of patriotism among young people, signalling the possible influence of the first indicator on the second. In particular, among students of PSAU, PUET, and PNPU, high statistical reliability ($p < 0.001^{***}$) was revealed between the relationship of all the studied components of social intelligence (*Social information processing, Social skills, Social awareness*) with patriotism. It can be assumed that there is a positive tendency to link these concepts, which is associated with the empathic component of social intelligence, which affects the empathy of young people, the ability to feel the emotions of people who find themselves in difficult life circumstances, in particular, internally displaced persons and soldiers, who experience a lot of inconvenience due to poor equipment and lack of high-quality resources and facilities.

Table 1. Results of the analysis of the influence of social intelligence on patriotism among university students (PSAU, PUET, PNPU)

TROMSØ test criterion/Level of patriotism	Social information processing	Social skills	Social awareness	General level of social intelligence development
Spearman’s correlation coefficient (Bosniuk, 2020)	0.319	0.357	0.352	0.414
Cheddock scale relationship strength (Turan, 2020)	noticeable, positive	noticeable, positive	noticeable, positive	noticeable, positive
Statistical significance of the attribute dependence	$p < 0.001^{***}$	$p < 0.001^{***}$	$p < 0.001^{***}$	$p < 0.001^{***}$

Note: $p \leq 0.05$ – low statistical reliability; $p \leq 0.01$ – average statistical reliability; $p \leq 0.001$ – high statistical reliability

Source: developed by the authors based on their own research

Among college students, there is also a positive relationship between social intelligence and patriotism, although it is characterised by weakness and low statistical reliability ($p < 0.05^*$), but in general, does not contradict the results obtained from an independent sample of students of PSAU, PUET, PNPU. The slightly lower correlation rate among college respondents can be explained by their

younger age and correspondingly lower financial capacity to provide monetary assistance to the army and internally displaced persons. With an almost equal subjective assessment of their own patriotism, they simply have less opportunities for its implementation through donations.

A comparison of the average indicators of social intelligence of college and university students, in general, showed

that they are approximately at the same level – 28% higher than the average. This result is consistent with the research by Y.I. Bhat (2016), which showed that high levels

of social intelligence among young people are associated with positive habits, responsibility, and academic performance.

Table 2. Results of the analysis of the influence of social intelligence on patriotism among college students

TROMSØ test criterion/Level of patriotism	Social information processing	Social skills	Social awareness	General level of social intelligence development
Spearman's correlation coefficient (Bosniuk, 2020)	0.159	0.258	0.129	0.188
Cheddock scale relationship strength (Turan, 2020)	weak, positive	weak, positive	weak, positive	weak, positive
Statistical significance of the attribute dependence	p < 0.05*	p < 0.05*	p < 0.05*	p < 0.05*

Note: p ≤ 0.05 – low statistical reliability; p ≤ 0.01 – average statistical reliability; p ≤ 0.001 – high statistical reliability

Source: developed by the authors based on their own research

Next, the study determines what factors influence a person's sense of patriotism, including their desire to help the Armed Forces of Ukraine, participate in volunteer activities, and support Ukraine in the information space, in particular, in social networks, instant messengers, chats, and forums. According to the authors of the study, the main derivatives of a well-developed social intelligence of a person are the following socially useful manifestations that are in good agreement with empathy, social sensitivity, social perception, and social thinking.

1. Awareness of oneself as part of one's own people, state, and society. It can be assumed that the main basis for the development of patriotism among people with developed social intelligence is a sense of unity with their nation and a desire to join the common cause. According to J. Freeman (2020), such people generally strive to make the world a better place, and this is especially true for their own country. Testing of a sample of students of PSAU, PUET, PNPU and Poltava colleges clearly demonstrated the influence of such a type of soft skills as social intelligence on the development of an active social position and pro-Ukrainian views that ensure economic and social security of the state. Even with the limited financial resources of students, they still strive to support the Armed Forces of Ukraine, help internally displaced persons, and actively participate in other areas of volunteer work.

2. Sense of gratitude to the Armed Forces of Ukraine for their own well-being and peace of mind. This aspect of social intelligence has been investigated by L. Gulliford (2019). It is associated with a person's ability to be grateful and maintain self-control in stressful situations. Due to this trait, students, and later graduates and adults, are able to appreciate good deeds from the bottom of their hearts, among which the very first can be considered the defence and protection of Ukraine from enemies. This creates a positive moral and ethical atmosphere in society, spreading patriotic enthusiasm among the general population.

3. Understanding that the safety of one's own relatives, friends, acquaintances, and oneself depends on the support of the military. The realisation that without heroic protection from Ukrainian soldiers it is impossible to survive in this war is also an important consequence of developed social intelligence. However, due to the poor economic condition of the state and the scale of military aggression, the Armed Forces of Ukraine also need support from the population. Every time students provide a donation or take part in volunteering, they do it to a certain extent for themselves and their relatives, as they strengthen the country's defence capability. That is, in this context, patriotism can be regarded not only as an altruistic manifestation but also as a fully conscious step to ensure their own well-being and the safety of their relatives and friends.

4. Desire to contribute to the victory of Ukraine, providing all possible assistance for this. An important component that forms a person's personality is empathy. It is empathy that helps feel the other person's emotions, and the desire to help and somehow improve the world around. The close relationship between social intelligence and empathy is confirmed by Onufriieva (2020) & Rahim (2018), and by the results of testing among students of PSAU, PUET, PNPU, and Poltava colleges. Based on this, it can be concluded that this soft skill determines a sense of unity with a certain community and the desire to perform actions that in the future will have positive consequences for the common cause, first of all – the protection of Ukraine, the support of its territorial integrity and sovereignty.

5. Desire to be useful to own people. Continuing the theme of developing empathy, this aspect of patriotism can be extrapolated to the format of smaller associations, for example, firms, companies, organisations. Research by V.O. Osaul (2022) showed that patriotic people tend to support national producers and employers. Thus, social intelligence, through the call of pro-Ukrainian patriotic sentiments, can positively influence the construction of effective

management activities of local businesses, providing them with loyal employees who strive to make every effort to improve the company in which they work. It can be assumed that a person who strives to be useful to society, to a certain extent, will show such a predisposition in relation to colleagues, management, or like-minded people.

6. Belief in the historical right of Ukrainians to their own land, language, and authenticity. Social intelligence, in addition to the cognitive function, embodies a powerful ideological component (Liadskyi, 2022), which allows a person to navigate in the socio-cultural plane, forming pro-Ukrainian axiological determinants, in particular, during the actualisation of historical paradigms. A nation without its own history always runs the risk of being assimilated by neighbouring countries. Thus, the policy of imposing a sense of inferiority on Ukrainians, which was actively implemented by Tsarist Russia and then the USSR, largely predetermined the beginning of hostilities on February 24, 2022. But these events contributed to the rise of national consciousness, deepening the interest of Ukrainians in their own glorious history. People with developed social intelligence, and consequently patriotism, try to better understand their own national and historical identity, find reasons to be proud of their people.

7. Motivation to join volunteer activities or spread socially significant information through all available communication channels, primarily through social networks and messengers. Powerful information support of the Armed Forces of Ukraine from the Internet is an important tool for social advertising, as a means of fostering patriotism among the youth of Ukraine (Osaula, 2022). Due to the fact that patriotic people promote and disseminate useful information for the implementation of state policy, they also help others to place the right accents and understand the most acceptable manner of behaviour. Thus, the dissemination of objective and truthful information is not linear, but avalanche-like, which contributes to increasing the effectiveness of the struggle on the information front.

8. Respect for the identity and heroic history of the Ukrainian people. The ideological component of social intelligence motivates a person to learn about the traditions of their nation, to study and critically comprehend the main historical narratives, as a set of related real or mythologised events, facts or assumptions that form the attitude of society to certain socio-cultural processes and political phenomena. A well-developed social intelligence performs an extremely important representative function in rethinking and interpreting historical narratives. Patriotic attitude determines respect for socio-cultural manifestations reflected in the mentality of own people (Richey, 2022).

9. Idea of being able to influence a situation, rather than just being a passive observer. People with less developed social intelligence are characterised by a tendency to passively

perceive circumstances (Hoseini, 2020). But when this type of soft skills is pronounced, then a person tries to be an active participant in major events. This assumption is confirmed by the results of testing students of PSAU, PUET, PNP, and Poltava colleges. Those of them who demonstrated an average or high level of social intelligence, as a rule, in their responses indicated a significant interest in volunteering and supporting information security in Ukraine. Respondents who did not demonstrate significant social competencies and skills did not show a sufficient level of public awareness, which should undoubtedly be considered when building the educational process in pre-primary and higher educational institutions.

10. Desire to unite with like-minded people, effectively socialise and fill own actions with socially useful meaning.

A person is a part of society, so the effectiveness of their involvement in public life depends on both the personal effectiveness of each citizen and the stability of the state in the face of external and internal challenges. Social intelligence, which positively affects the development of patriotism, encourages a person to establish relations in the team and their own community. The studies (Rupar, 2021) have shown that a sense of patriotism can be extrapolated to respect for social norms and rules, which is undoubtedly an important component of socialisation.

These motivations are in excellent agreement with the studied components of social intelligence (Goswami, 2019), in particular: *Social information processing* – rapid perception and understanding of the main trends of society; *Social skills* – the ability to find up-to-date information and correctly interpret it; *Social awareness* – self-identification as a representative of one's own people and awareness of the need to support those who defend the integrity of the country.

Despite different approaches to the components of social intelligence, it can be noted that *Social information processing*, *Social skills* and *Social awareness* have proven to be well established in the survey among students, which has been shown by the developers of the TROMSØ method, D. Silvera, M. Martinussen & T. Dahl (2001) and further research by M. Goswami (2019) & I. Liadskyi (2022). These three components are completely understandable for young people and do not require additional explanations. They describe a person's subjective attitude to the level of development of their social intelligence. Given the range of possible answers, namely from 1 to 7 points, and the fact that all possible options are present in the completed tests, it can be stated that the respondents answered honestly. The objectivity of testing is also conditioned by its anonymity. The importance of this survey was clearly conveyed to the students, as it is aimed at strengthening the economic, social, and political security of the state. Their answers became the basis for improving the curriculum in institutions of professional pre-primary and higher education. For the most part, soft skills studied at Ukrainian universities are related to a student's personal effectiveness, in particular, time management or leadership, but they are not at all

aimed at consolidating the efforts of an entire nation, which takes place during periods of social and economic upheaval. The confirmation of the positive relationship between social intelligence as a kind of soft skill and patriotism or propensity to volunteer, as demonstrated by the sample of students of PSAU, PUET, PNP, and Poltava colleges, provides a new look at the aspect of becoming a citizen in a completely different way.

From these positions, research aimed at establishing the connection of social intelligence with other useful qualities of a citizen for society, including rejection of corruption, charity work, active public position, political awareness, etc., looks promising. The authors are confident that further study of social intelligence would allow developing effective recommendations for building and managing the educational process of colleges and universities to improve soft skills useful for the state among applicants for higher education. In particular, this will benefit not only the state but also every citizen. The fact is that social consciousness and motivation of a person to perform socially significant activities have a noticeable positive effect in terms of achieving success. The issue of more effective peer socialisation of students who are actively engaged in volunteer activities is in good agreement with the study by Boru Nece (2017). The results of a survey among Turkish students participating in the volunteer movement demonstrate higher self-esteem, more responsible attitude to school and education, high civic engagement, developed social skills, and better academic performance. Thus, if the developed social intelligence really encourages young people to patriotism, social responsibility, and involvement in volunteering, then this means that it contributes to achieving success in training, building friendly relationships and further employment. In addition, according to the data obtained by T. Filges (2020), volunteering helps reduce depression, which is extremely important in the stressful conditions of war. The fact is that by contributing to the future victory of their people in any way (volunteering, donating, protecting their state in social networks, etc.), a person ceases to feel like a hostage to the situation, feeling the opportunity to somehow influence it. Thus, university students with a well-developed social intelligence, and consequently a sense of patriotism, get a real positive effect on their mental health, unlike those who perceive the events taking place in the country and the world passively and without initiative. In particular, it has a beneficial effect on their stress tolerance and ability to overcome obstacles.

In this regard, a promising area for further research is to determine the pedagogical conditions for the development of social intelligence, the fostering of patriotism and a stable civic position, the development of social competence of students during their studies in institutions of professional pre-higher and higher education. The authors emphasise the need for cooperation between colleges and universities with territorial recruitment and social support centres that can provide training for young people to defend Ukraine. Well-developed organisational and methodological

support of this process would allow implementing practical mechanisms for the development of social competence of students, which would definitely strengthen Ukraine in the face of potential future challenges and help in ensuring stable economic development, strengthening Ukrainian business and deepening the national identity of Ukrainians, in order to develop a powerful and self-sufficient nation. It is also necessary to pay attention to the preparation and conduct of a series of master classes, workshops, and trainings for teachers who will work towards developing the social competence of students during their studies in institutions of professional pre-higher and higher education.

CONCLUSIONS

The study of the correlation between social intelligence and patriotism has demonstrated a significant trend towards a noticeable positive relationship between the development of *Social information processing*, *Social skills*, *Social awareness* and the desire and motivation of young people to support their own people, the state, and the armed forces. This result is in good agreement with the scientific assumption that became the basis of the study that educating students of social competence helps strengthen the economic, political, and social security of the state. The results obtained are explained, in particular, by a person's awareness of themselves as a part of society, which imposes not only advantages but clear responsibilities towards its people. In addition, the active social position and assistance of the Armed Forces of Ukraine give students a certain opportunity to influence the course of events and to feel their importance and significance in the national context.

Developed social intelligence reliably correlates with patriotism and civic position, determining the style of human behaviour during periods of social, economic, and political disasters, the quintessence of which can be considered war. The purpose of the study was to identify the influence of social intelligence and a sense of patriotism among young people. Establishing a link between them opens up effective mechanisms for fostering respect for their people and the country, and in the future provides an additional tool for strengthening the economic and social security of Ukraine.

As a suggestion, the authors note the need for further research in this line with the development of specific recommendations for managing the social intelligence of students, employees of national enterprises, and Ukrainian society. The fact of the relationship between social intelligence and patriotism in young people indicates the need to consider this type of soft skills in the preparation of recommendations for building the educational process on the national level with the need to introduce the appropriate discipline in the educational and professional curricula of colleges and universities.

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CONFLICT OF INTERESTS

The authors declare that the study was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Управління соціальним інтелектом в контексті виховання патріотизму громадянина

Анотація. У статті розглядається можливий вплив соціального інтелекту на формування такого громадянського почуття, як патріотизм. Повномасштабна агресія проти України, яка розпочалася 24 лютого 2022 року, наочно продемонструвала актуальність патріотичного виховання молоді, що знаходить своє відображення не лише у виконанні військового обов'язку, а й активному волонтерстві та підтримці національної ідеї в медіапросторі, тобто формуванні інформаційної безпеки держави. Метою дослідження є виявлення впливу соціального інтелекту на почуття патріотизму. Дослідження проводилося серед студентів коледжів та університетів Полтави. Для виявлення рівня соціального інтелекту молоді використовувався експрес-тест TROMSØ, розроблений норвезькими дослідниками. Завдяки цій методиці вдалося отримати необхідні дані для проведення кореляційного аналізу соціального інтелекту з почуттям патріотизму. Експеримент виявив достовірний вплив на патріотизм таких складових соціального інтелекту, як соціальна обробка інформації, соціальні навички та соціальна обізнаність. Формування у молоді під впливом соціального інтелекту певної системи цінностей, яка посилює почуття патріотизму, є одним з основних можливих пояснень таких результатів. Розвиток у студентської молоді соціальної компетентності сприяє зміцненню економічної, політичної та соціальної безпеки держави. Подальше вивчення практичних механізмів розвитку соціального інтелекту молоді безумовно зміцнить державу перед потенційними майбутніми викликами та сприятиме забезпеченню стабільного економічного розвитку

Ключові слова: соціальні компетенції; соціальна свідомість; соціальні навички; кадрова безпека; м'які навички; соціальна активність; економічна безпека

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