

Investment Analysis in Technology with a Special Focus on Future Green Fleet Development – A Case Study of Jadrolinija – a Joint-Stock Company from Rijeka, Croatia

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ABSTRACT: The development of a green ship fleet in the maritime industry can be achieved only through investments in shipbuilding and outfitting technologies, as well as improvements in the environmental performance of propulsion engines and the more efficient use of renewable energy sources that ships will utilise during navigation or while in a port. Jadrolinija, a joint-stock company that is the Croatian national passenger shipping company, should intensify its efforts to renew its fleet of vessels that transport domestic passengers and tourists from the mainland to the most remote island destinations in the Republic of Croatia. The objective of this paper is to analyse the correlation between the company's total investments and its overall revenue and expenditures during the observed eleven-year period.

1 INTRODUCTION

In recent decades, the global shipping industry, as the foundation of global trade, has faced growing challenges in aligning its operations with established sustainability goals and ongoing technological progress (Uchechukwu, 2024). When assessed in terms of the value it generates, the entire transport by ships, which carries around 90% of global trade, is, statistically, the least harmful mode of transport for the planet and the environment. Furthermore, when compared to land-based industries, the shipping sector accounts for a relatively small percentage of marine pollution caused by human activities (IMO, 2025). The maritime industry, as a global industry, is facing a great number of challenges that require prompt and robust responses. One of its main challenges is aligning rapid growth and technological progress with the requirements of green technology and sustainable development. The growing need to introduce alternative fuels, reduce exhaust gas emissions, utilise renewable energy sources more effectively, implement

artificial intelligence in ship management systems, and develop energy-efficient vessel designs capable of enhanced wind-assisted propulsion raises important questions about the maritime industry's flexibility and financial resilience. It challenges the industry to respond effectively to environmental demands by investing in green technology and to adjust its operational efficiency to increasingly complex and stringent global ecological standards and objectives. It is an indisputable fact that all ships, especially passenger ships, must be technologically upgraded and made as 'eco-friendly' as possible because of increasingly strict regulations concerning quality, safety, and environmental standards. However, many questions remain unsolved, such as the adaptation period, the scope of each segment of the maritime industry, as well as the issue of transparency and ethics in the implementation of green technology, particularly in less developed maritime countries.

The main objective of this paper is to determine the correlation level between the total investments made

by *Jadrolinija*, a joint-stock company from Rijeka (hereinafter *Jadrolinija*), and its total revenue and expenditures over an eleven-year observation period. Following this goal, four research questions have been formulated.

- Research Question 1 (RQ1): Has *Jadrolinija* invested more financial resources into purchasing and integrating new vessels into the fleet than into other types of investments during the observed period?
- Research Question 2 (RQ2): Is there a positive correlation between *Jadrolinija*'s total revenue and total expenditures during the observed period?
- Research Question 3 (RQ3): Is there a positive correlation between *Jadrolinija*'s total expenditures and total investments during the observed period?
- Research Question 4 (RQ4): Is there a positive correlation between *Jadrolinija*'s total revenue and total investments during the observed period?

This paper consists of five chapters. The introduction, as the first chapter, presents the research objective and the research questions. The second chapter examines the historical development, role, and *Jadrolinija*'s current state as the main domestic passenger shipping line operator in the Republic of Croatia. In the third chapter, the authors provide a theoretical review of the literature on maritime investments, with a focus on green technology. The fourth chapter provides a detailed methodology and results of the research. The fifth chapter, i.e., the conclusion, provides a brief overview and discusses the limitations and shortcomings of the research, along with constructive suggestions for future studies on this topic. According to the reviewed literature and the authors' findings, no similar research has been conducted on this topic so far, which highlights the scientific contribution of this research.

2 HISTORICAL DEVELOPMENT, ROLE, AND JADROLINIJA'S CURRENT STATE

2.1 *Jadrolinija's historical development*

From both maritime and legal perspectives, *Jadrolinija* is one of the oldest companies involved in transport in the history of shipping in the Republic of Croatia. It was founded in the city of Rijeka on January 20, 1947. *Jadrolinija* is the legal successor of *Jadranska plovidba* JSC, a part of *Dubrovačka plovidba*, and the remainder of *Zetska plovidba*. The first Croatian steamship, *Hrvat* (Figure 1), was built in Rijeka on July 23, 1972. Hence, the first regular maritime route between Senj and Rijeka was established. (Povijesni pregled nastanka i razvoja *Jadrolinije* <https://www.jadrolinija.hr/hr/novost/povijest>, accessed June 2, 2025).



Figure 1. The first Croatian steamship, *Hrvat* Source: Retrieved from <https://artkvart.hr/na-danasnji-dan-1872-porinut-prvi-hrvatski-parobrod-hrvat/> (accessed June 16, 2025)

At the end of the 19th century, several Croatian shipowners joined together and established a new shipping company, so in 1899, the first modern shipping company, *Ungaro-Croata*, was founded. The company primarily focused on the transport of goods and passengers across the Adriatic and across the world's seas, operating until the end of 1919, when it ceased to exist. After the end of the Austro-Hungarian Monarchy, several shipowners formerly affiliated with various companies established new shipping firms in the newly formed states. In 1922, several of these companies, *Jadranska plovidba* (formerly known as *Ungaro-Croata*), *Dalmatija*, the *Austro-Croatian Steamship Company*, *Coastal Steamship Company* from Dubrovnik, the *Croatian Steamship Company* from Senj, and *Oceanija* from Trieste, joined together and agreed on the new name of the merged company: *Jadranska plovidba* JSC Sušak. In 1947, a new shipping company called *Jadranska linijska plovidba* was founded. People used a shortened version of the name, *Jadrolinija*, from its beginnings, although the company's official name was *Jadranska linijska plovidba*. *Jadranska linijska plovidba* developed steadily up until the 1960s, ordering new vessels and renewing the old ones. During this period, ferries were introduced to connect the islands with the mainland, and international maritime routes were gradually established. *Jadrolinija* played an extremely important role during the *Croatian Homeland War*, when, despite numerous naval blockades and attacks on its vessels, it successfully connected parts of Croatia that were attacked (*Povijesni pregled nastanka i razvoja *Jadrolinije**, <https://www.jadrolinija.hr/hr/novost/povijest>, accessed June 2, 2025).

As the company continued to grow and new maritime routes were introduced, the need emerged for a more attractive, representative, and centrally located headquarters—one that would support simpler, more efficient operations and fleet management. *The Jadran Palace* (Figure 2) was chosen as the company's central headquarters. Originally, the palace had been built to serve as the headquarters of the first Hungarian shipping company, *Adria*, founded in Rijeka in 1882 (*Palača Jadran - simbolika Rijeke kao pomorskog emporija kozmopolitskih razmjera*, <https://www.jadrolinija.hr/hr/novost/zgrada-jadrolinije---palaca-jadran>, accessed June 2, 2025).



Figure 2. The Jadran Palace in Rijeka is, even today, the headquarters of *Jadrolinija*. Source: Retrieved from <https://www.novolist.hr/rijeka-regija/rijeka/palaca-jadran-palaca-pomorstva-i-brodarstva/>, (accessed June 16, 2025)

2.2 The role and the current state of Jadrolinija

The strategic role of *Jadrolinija* in connecting Croatia's islands, and by extension, in the development of tourism, is undeniable, as noted in the research by Grižin et al. (2023). However, studies on this topic are still scarce. Today, *Jadrolinija*'s fleet consists of 59 vessels, including 14 catamarans, 39 ferries, 4 traditional passenger ships, and 2 ferries operating on international maritime routes to Italy and Montenegro. Thus, *Jadrolinija* represents a central state-owned company, not only for the local people on the islands, but for trade and tourism as well. The annual figures show that *Jadrolinija* transports over 12 million passengers and 3.5 million vehicles (O Jadroliniji, <https://www.jadrolinija.hr/hr/tvrtka-profil>, accessed June 25, 2025). Furthermore, *Jadrolinija* will build three electric vessels that would be unique in the Mediterranean. It is important to emphasise that the construction of these vessels will require both the seafarers' additional training and adequate infrastructure for charging the vessels' batteries, particularly when operating routes to the islands (Prvi na Mediteranu: Jadrolinija uvodi električne brodove, <https://pomorac.hr/2024/06/29/prvi-na-mediteranu-jadrolinija-uvodi-elektricne-brodove/> accessed June 25, 2025). In the following text, the Figures show some of the ships, catamarans, and ferries that are a part of *Jadrolinija*'s fleet.



Figure 3. Marko Polo ferry operating on international maritime routes. Source: Retrieved from <https://www.jadrolinija.hr/hr/flota-brod/marko-polo> (accessed June 25, 2025)



Figure 4. Lara, a small coastal passenger motor vessel. Source: Retrieved from <https://www.jadrolinija.hr/hr/flota-brod/lara> (accessed June 25, 2025)



Figure 5. Catamaran Cvijeta, one of the youngest in the fleet. Source: Retrieved from <https://www.jadrolinija.hr/hr/flota-brod/cvijeta> (accessed June 25, 2025)



Figure 6. Bartol Kašić, ferry on Jadrolinija's local routes. Source: Retrieved from <https://www.jadrolinija.hr/hr/flota-brod/bartol-kasic> (accessed June 25, 2025)

Unfortunately, *Jadrolinija*'s weakness is the average age of its ferries, passenger ships, and catamarans used to transport passengers and cargo between the mainland and the islands, which could pose a potential safety risk. As shown in Figure 7, the average age of ferries operating on international routes is 42 years, whereas the age of passenger ships is 47 years. The average age of the other ferries category is 27.43 years, and catamarans, as the youngest in the fleet, are 22.64 years old. It should be emphasised that *Jadrolinija* has renewed its fleet mostly with catamarans, especially during the last ten years.

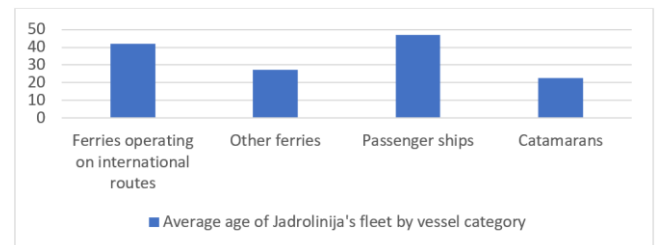


Figure 7. Average age of Jadrolinija's fleet by vessel category. Source: Authors according to <https://www.csamarenosturm.hr/hr/statistika/> (accessed June 30, 2025)

In the following text, *Jadrolinija*'s SWOT analysis is presented. The authors have used one of the most accepted tools for strategic planning in economics, especially in management, to analyse and present the company's internal factors (strengths and weaknesses) as well as external factors (opportunities and threats). According to Gonan Božac (2008), the most important internal and external factors of the company's future are, simultaneously, strategic factors, and are, therefore, summarised in the SWOT analysis. SWOT analysis should identify opportunities that cannot currently be exploited but could be realised in the future, as well as potential threats that may harm the company's operations in the near or distant future. Both opportunities and threats are part of the external environment and are not within the control of the company's management. The internal environment includes strengths and weaknesses, which are within the management's control (Gonan Božac, 2008). As a strategic tool, SWOT analysis was used in the maritime industry in the research on the shipbuilding industry in Bangladesh (Halder et al., 2023), on passenger transport companies in Iran (Sebt et al., 2018), and in the analysis of maritime traffic safety in the Gulf of Guinea (Ofosu-Boateng, 2017).

Table 1. Jadrolinija's SWOT analysis

STRENGTHS:	WEAKNESSES:
- A national shipping company with a long tradition, strategically important for the Republic of Croatia.	- Without subsidies provided by the Croatian government, the company's operations would be at risk.
- Domestic workers (most of the crew on ships, ferries, and catamarans are seafarers from Croatia).	- Problems in finding qualified domestic workers.
- Annual financial subsidies provided by the government and the line ministry.	- Insufficiently strong marketing activity through digital channels.
- The company provides reliable connectivity to all islands in the Croatian part of the Adriatic.	- High average age of ships, ferries, and catamarans.
- A state-granted monopoly on maritime routes, as no other comparable large operator exists in the market in the Republic of Croatia.	- Underdeveloped on board hospitality service.
	- Lack of so-called green ships and a small number of newer vessels in the fleet.
OPPORTUNITIES:	THREATS:
- Continued focus on keeping domestic workers, stronger financial subsidies, as well as other non-financial benefits for young Croatian seafarers who want to work for Jadrolinija.	- Management's poor strategic decisions.
- Strengthening the fleet with newer vessels, especially through the so-called green fleet.	- Lack of acceptance and/or insufficient understanding of priorities and requirements by domestic workers.
- Continuous education and training of the crew for emergency situations at sea.	- Inadequate crew training for emergency situations at sea (severe weather, ecological incidents, passenger drowning, etc.).
- Stronger marketing promotion through digital channels.	- Stricter law regulations for passenger ships within EU member states (stricter rules, certifications, lower average age of vessels, etc.).
- Improving the digitalisation process for booking parking, tickets, communication, hospitality services, and other additional services on board and in the port.	- Insufficient investment in fleet modernisation and renewal of existing ships, ferries, and catamarans.
- Application for EU funds aimed at modernising the existing vessels in the fleet.	- Instability in the country/region (war, economic crisis, etc.).
	- New types of crises (e.g., cyberattacks, pandemics) that could affect the company's operations.

Source: Authors

Based on the SWOT analysis, it can be concluded that *Jadrolinija* has a monopoly on maritime passenger routes in the Republic of Croatia. It receives annual financial stimulus, i.e., subsidies for maintaining these routes, and as such, is an important strategic company for the maritime passenger transport of the Republic of Croatia. As such, the company operates successfully. The company can take pride in the fact that, despite difficulties in finding qualified maritime professionals, it continues to employ almost entirely domestic workers. What is concerning, however, is the high average age of vessels in *Jadrolinija's* fleet, as shown in Figure 7. Furthermore, it can be noticed that *Jadrolinija* lacks so-called green ships in its fleet, and there is a shortage of vessels of more recent construction. Regarding external factors, *Jadrolinija* must focus on investing in new vessels, particularly in *green ships*, and in domestic workers. It should also engage more actively in the digitalisation of business operations and communication with customers. The company must pay attention to the requirements of its employees, both in terms of financial and non-financial

benefits for domestic seafarers and other employees. Furthermore, it must ensure continuous training and preparedness of its crew for emergency situations at sea, and for other types of threats and crises that could endanger its reputation and operations in the future.

3 THEORETICAL LITERATURE REVIEW ON INVESTMENTS IN THE MARITIME INDUSTRY WITH A BRIEF OVERVIEW OF THE APPLICATION OF GREEN TECHNOLOGY

According to *Clarksons Shipping Intelligence Network* 2024 in Moutzouris et al. (2025), the shipping industry has not achieved satisfactory progress regarding the green transition because "as of August 2024, only 33% of the total fleet (measured in gross tonnage) was equipped with modern eco-engines, whereas 7% was able to operate on other fuels rather than oil" (*Clarksons Shipping Intelligence Network* 2024 in Moutzouris et al., 2025, p. 2). Rebolo (2020) emphasises the role of the state, i.e., the government and international organisations, in defining the direction and goals for greening international shipping by developing efficient financial instruments. *The European Investment Bank* aims to ensure prompt implementation of green technology investments for shipping companies in the EU through the *Green Shipping Guarantee* (GSG) programme (Green Shipping Guarantee Program, available at <https://www.eib.org/en/projects/all/20150334>, accessed July 1, 2025). For the European shipping companies, this is an excellent opportunity for a more substantial fleet renewal. A large and comprehensive empirical study of the role of green investments under conditions of market uncertainty was conducted by Moutzouris et al. (2025). The impact of investment efficiency on a company's financial results was presented in the research by Fitri and Marietza (2024), whereas the impact of investment decisions on the company's financial results was elaborated in more detail by Quddus (2023). According to Kim and Park (2025), vessel investments are the key to success in the shipping industry and have a great impact on the global economic trends. Furthermore, Kim and Park (2025) also emphasise that a "key factor in the profitability of vessel investments is the interaction among various factors, including the type of vessel, market conditions, and operational efficiency". Kim and Park (2025) classify investment strategies in the shipping industry into those with a short-term approach and those with a long-term approach. According to their opinion, short-term strategy focuses on maximising returns by capitalising on market volatility, whereas long-term strategies prioritise stable revenue generation. In their research Hryshyna et al. (2021) emphasise the importance of financial and investment processes in ensuring the development of maritime infrastructure in Ukraine. If financial investments were categorised by time periods, according to Edan et al. (2022), they would be classified into short-term and long-term investments. Investment decision-making choices in liner shipping companies were analysed by Fan and Luo (2013). They point out that investment decision-making choices can be classified using the decision tree method, either as the order of a completely new vessel or as the purchase of a used vessel (Figure 8). The key factors in decision-

making when evaluating and selecting each option are prevailing transport market conditions, current ship market conditions, and the specific attributes of the vessel (Fan and Luo, 2013). The decision-making process, i.e., the purchase, is shown in Figure 8. Strategies formulated at the company's corporate level are decisions made by senior management and affect both the company's overall direction and operations (Puranam & Vanneste, 2016; according to Panayides, 2019). In liner shipping companies, the decision to purchase a new or used vessel is made by the management. Fan and Luo (2013) highlight the differences in decision-making on purchasing a vessel, i.e., in making an investment. They emphasise that new vessel orders will be made only if the company has a clearly outlined long-term strategic plan, whereas used vessels will be purchased solely to address the company's short-term operational requirements.

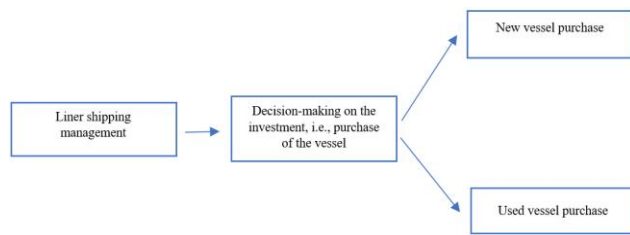


Figure 8. Investment decision-making process in a liner shipping company. Source: Retrieved and adapted according to Fan & Luo (2013, p. 9)

Fan and Luo (2013) emphasise that “shipping companies must be extremely cautious when deciding on investing in vessels”. Insufficient investments may result in financial losses and reduce the company's current market share. Therefore, they can endanger the company's long-term competitive position. However, excessive investments can produce negative cash flow, which is the result of high financial expenses, especially when freight rates are low (Fan and Luo, 2013).

4 METODOLOGY AND REVIEW OF THE RESEARCH RESULTS

This paper aims to present the correlation between *Jadrolinija's* investments and selected financial

indicators such as total revenue and total expenditures. For this purpose, official internal data were obtained from *Jadrolinija* and delivered to the authors' official e-mail addresses. The data included in this research were the company's total revenue, total expenditures, and investments. Descriptive statistics for each variable (Table 3) were calculated, as well as their interrelation using the *Pearson Correlation Coefficient* (Table 4). According to Kader and Franklin (2008), the *Pearson Correlation Coefficient* (r) is used as a measure of direction and strength of a linear relationship between two observed variables. Although frequently used in the maritime industry, the authors highlight its application in the research on the correlation between maritime safety and safety-related factors conducted by Kim (2005). The data obtained from *Jadrolinija* refer to an eleven-year period and were analysed using the statistical software package *Jamovi* (Version 2.3) within the *Jamovi Project* (2022) and *R Core Team* (2021). Table 2 and Figure 10 indicate the eleven-year trend of total and specific investments in the period from 2014 to 2024. It can be noticed that vessel purchase and the integration of vessels into the fleet account for the largest share of total investments, specifically, 79.11% over the observed eleven-year period. *Jadrolinija* continuously invested in new vessels throughout the observed period, except in 2017 and 2022, when no investments in new vessels were recorded, as shown in Table 2.

Capital maintenance accounted for 10.11%; investments in equipment, property, and IT made up 10.64%, while project-related investments represented only 0.14% of total investments during the observed 11-year period. Therefore, it can be concluded that, as far as investments are concerned, *Jadrolinija* invested more in the purchase of vessels and their integration into the fleet than in other investments, especially in the period from 2022 to 2024. This tendency is less evident during the period from 2015 to 2022. However, when compared to other types of investments, it is more significant. Therefore, these findings give the answer to *Research Question 1*, i.e., “Has *Jadrolinija* invested more financial resources into purchasing and integrating new vessels into the fleet than into other types of investments in the observed period?”.

Table 2. Types of *Jadrolinija's* investments in the period from 2014 to 2024 in millions of euros

YEAR	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Investment	Investment amount (excluding VAT) in EUR	Investment amount (excluding VAT) in EUR	Investment amount (excluding VAT) in EUR	Investment amount (excluding VAT) in EUR	Investment amount (excluding VAT) in EUR	Investment amount (excluding VAT) in EUR	Investment amount (excluding VAT) in EUR	Investment amount (excluding VAT) in EUR	Investment amount (excluding VAT) in EUR	Investment amount (excluding VAT) in EUR	Investment amount (excluding VAT) in EUR
Vessel purchase and the integration of vessels into the fleet	32,904,591	475,233	4,864,784	0	9,177,360	8,417,415	10,198,874	2,191,584	0	36,192,041	39,762,948
Capital maintenance	0	0	1,207,379	1,235,457	1,640,413	1,082,746	1,343,792	1,175,110	2,009,576	3,677,166	5,055,801
Investments in equipment, property, and IT	2,247,015	1,149,347	1,180,931	1,163,194	611,793	1,138,970	1,925,039	1,579,937	1,719,861	3,816,248	2,816,439
Projects	0	0	0	0	93,157	201,208	0	0	0	0	0
TOTAL INVESTMENTS	35,151,605	1,624,580	7,253,094	2,398,651	11,522,723	10,840,340	13,467,706	4,946,631	3,729,437	43,685,455	47,635,188

Source: Authors, according to *Jadrolinija's* internal data

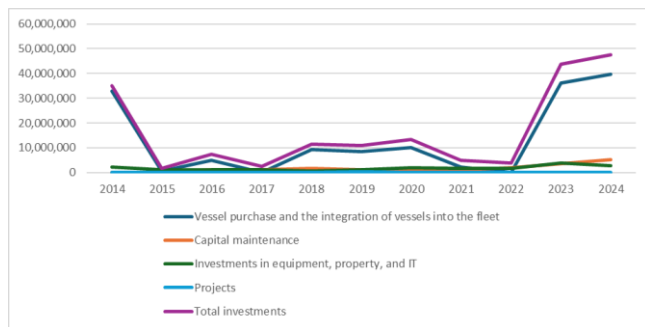


Figure 9. Total and specific investments in the period from 2014 to 2024 in millions of euros (VAT excluded). Source: Authors, according to Jadrolinija's internal data

Research conducted by Laitinen and Laitinen (2022), Laitinen (2020), and Dichev and Tang (2008) used the simultaneous correlation between revenue and expenditures as a proxy for assessing the quality of matching. If all costs can be directly and specifically associated with certain revenue, a perfect matching will be achieved. However, the absence of matching results in a low correlation between revenue and expenditures (Dichev and Tang, 2008, according to Krishnan et al., 2021). Therefore, with a poor matching and a lower degree of correlation, the profit's volatility increases, whereas the persistence of a company's profit decreases (Dichev and Tang, 2008, according to Laitinen and Laitinen, 2022). Figure 10 indicates that in the period from 2014 to 2024, there was an increase in total revenue, as well as in expenditures (closely following the revenue). However, in 2020, there was a significant decrease in revenue accompanied by a considerable increase in expenditures (Figure 10). The reason for such a situation was the inability to operate regular maritime routes due to restrictive COVID-19 measures. This is confirmed in the research conducted by Yazir et al. (2020). They have confirmed that, during the COVID-19 pandemic, shipping companies were facing great operational losses and obstacles since they had to adapt to health and safety measures valid on a global level.

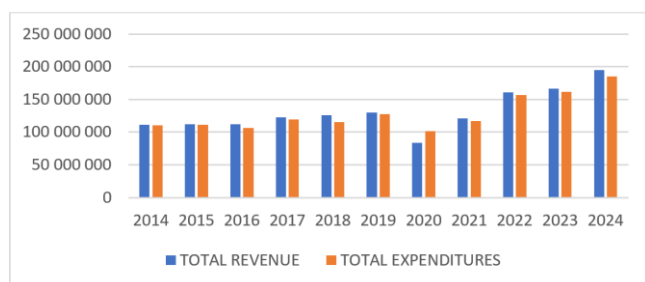


Figure 10. Jadrolinija's revenue and expenditures in the period from 2014 to 2024 in millions of euros. Source: Authors, according to Jadrolinija's internal data

In this case, there is a strong and significant correlation between total revenue and expenditures ($r=0.977$, Table 4). Therefore, these findings give the answer to *Research Question 2* (Is there a positive correlation between Jadrolinija's total revenue and total expenditures during the observed period?). The impact of investment efficiency on a company's financial results was studied in the research by Fitri and Marietza (2024), whereas the impact of investment decisions on a company's financial results was studied in detail by Quddus (2023). Craig & Moores (2005), according to Kotane and Kuzmina-Merlino (2012), states that

revenue growth is the company's financial indicator. The ratio of total revenue and total expenditures, used as a financial indicator of the company's business analysis, was applied in the research by Posavec et al. (2021). Dong and Doukas (2022), according to Fitri and Marietza (2024), state in their research that a company's investment efficiency can impact the company's financial results. In our study, the results of the relation between total expenditures and total investments show a significant positive correlation between total expenditures and total investments ($r=0.617$, Table 4). Therefore, these findings give the answer to *Research Question 3*, i.e., "Is there a positive correlation between Jadrolinija's total expenditures and total investments during the observed period?". Furthermore, the research also indicated that there is an insufficiently significant level of positive correlation between total revenue and total investments ($r = 0.577$, Table 4), because of the small sample size ($N = 11$), a low value of degrees of freedom ($df = 9$), and a p-value above the acceptable threshold ($p'.06$). Therefore, these findings give the answer to *Research Question 4*, i.e., "Is there a positive correlation between Jadrolinija's total revenue and total investments in the observed period?".

Table 3. Descriptive statistics results of the analysed variables

	N	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
TOTAL REVENUE	11	1.31e+8	3.14e+7	83447761	195209863
TOTAL EXPENDITURES	11	1.28e+8	2.72e+7	101447114	185492960
TOTAL INVESTMENTS	11	1.66e+7	17101106	1624580	47635188

Source and data processing: Authors

To simplify interpretation and facilitate understanding of the relation between the variables examined in the research, their interrelations (based on findings from the reviewed scientific literature) are illustrated in Figure 11.

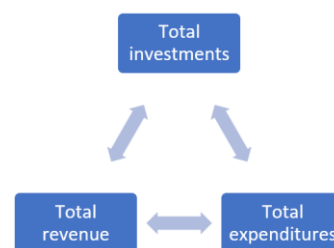


Figure 11. Proposed model of the relations between variables based on the reviewed literature. Source: Authors

Table 4 below presents the results of the correlation analysis of the variables included in the research.

Table 4. Results of the correlation analysis of the variables included in the research.

VARIABLES	df	TOTAL REVENUE	TOTAL EXPANDITURES	TOTAL INVESTMENTS
TOTAL REVENUE	9	1.000	0.977***	0.577
TOTAL EXPANDITURES	9	0.977***	1.000	0.617*
TOTAL INVESTMENTS	9	0.577	0.617*	1.000

Note: $p<0.05^*$, $p<0.01^{**}$, $p<0.001^{***}$

Source and data processing: Authors

It should be emphasised that the results of the correlation analysis of the relation between total

revenue and total expenditures (RQ2) and of the relation between total expenditures and total investments (RQ3) are positive and statistically significant despite the small sample size (N=11) and a low value of degrees of freedom (df=9). However, the result of the correlation analysis of the relation between total revenue and total investments (RQ4), despite the high level of correlation coefficient ($r=0.577$) is not statistically significant because of the small sample size (N=11), low degrees of freedom (df=9), and an elevated p-value ($p'.06$, above the accepted threshold). Therefore, in this case, we can speak of a trend, but not of statistical significance. Due to the small sample size (N) in this research, no further statistical analysis could be conducted.

5 CONCLUSION

The application of green technology undoubtedly gives maritime companies the opportunity to gain a competitive advantage over other companies, i.e., quick adaptation leads to securing a strategic position, and consequently to increasing their market share, which enables them to become market leaders in a specific segment of the maritime sector. *Jadrolinija* holds this position in the Republic of Croatia thanks to the strategic policies of all Croatian governments since the establishment of the Republic of Croatia. The key to the company's future viability lies in the fact that *Jadrolinija* must renew its fleet as soon as possible, maintain its tradition as a strategically important state-owned company in liner passenger transport, preserve its reputation, and retain domestic seafarers. It has to adapt to the new trends, starting from digitalisation to the integration of green ships and ships with lower CO₂ emissions. Some of the limitations of this research are the absence of a comprehensive theoretical literature review on the subject, the restricted time of observation, and the focus on only three financial indicators (total revenue, total expenditures, and total investments). Regarding future research, the authors propose a thorough and more detailed analysis of international literature, an extended observation period, and the use of additional financial indicators deriving from financial reports that could be applied to future statistical methods and analysis. According to the available literature and the authors' knowledge, no similar research has been conducted so far, which highlights the scientific contribution of this paper.

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