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## Analysis of the Marina Service Offer in the Southern Baltic Region

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Ewa Hącia<sup>1</sup>, Aleksandra Łapko<sup>2</sup>

**Abstract:**

**Purpose:** The article aims to present the results of the analysis of the service offer addressed to sailing tourists in the Baltic Sea. The focus was on services available both in the marina and in its immediate vicinity. This offer was analyzed mainly in terms of quantitative purposes. The territorial scope of the research covers marinas located in the southern Baltic region in Germany, Poland, Lithuania, in the Russian Kaliningrad district and on the Danish island of Bornholm.

**Design/Methodology/Approach:** The research was carried out in accordance with the prepared research procedure and concerned 178 marinas. The entire process was divided into stages with various research methods and techniques applied, including mathematical and statistical methods, participant observation, and internet resource exploration.

**Findings:** Based on the data on the number of marinas offering individual services, these services have been classified into basic, complementary and optional. The port in the Pomeranian region, located in a large city, offered the most services. The highest average number of services available in the analyzed marinas was observed in the West Pomeranian region (also in Poland), while the lowest in the Kaliningrad region. The research did not show a strong correlation between the number of available berths in a yacht port (from all regions together) and the number of services offered. Considering the regions separately, the situation was different. Three out of six showed a statistically significant linear relationship - from moderate to strong.

**Practical Implications:** The results of the analysis can be useful for entities responsible for the development management of yacht ports in the southern Baltic region.

**Originality/value:** The analysis was carried out for the southern Baltic region, taking into account the differences in its individual parts.

**Keywords:** Services, marina, southern Baltic region.

**JEL classification:** M20, Z31, L80.

**Paper Type:** Research study.

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<sup>1</sup>Maritime University of Szczecin, Poland, e-mail: [e.hacia@am.szczecin.pl](mailto:e.hacia@am.szczecin.pl);

<sup>2</sup>Maritime University of Szczecin, Poland, e-mail: [a.lapko@am.szczecin.pl](mailto:a.lapko@am.szczecin.pl);

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## 1. Introduction

The article aims to present the results of the analysis of the service offer addressed to sailing tourists in the Baltic Sea. The focus was on services available both in the marina and in its immediate vicinity. This offer was analyzed mainly in terms of quantitative purposes. The territorial scope of the research covers marinas located in the southern Baltic region in Germany, Poland, Lithuania, in the Russian Kaliningrad district and on the Danish island of Bornholm. It is an area where a very dynamic increase in interest in sailing tourism has been observed in the last decade. The existing and new marinas are being modernized and many promotional activities are undertaken, resulting in an increasing number of sailors.

The article focuses on analyzing the service offer of yacht ports. The quality of these services was not assessed. The analysis covered the classification and quantity. This made it possible to determine the frequency of appearance of a given service in the offer of the surveyed ports, and thus to determine the potential of the facilities in terms of the complexity of the service offer and the possibility of satisfying complex customer needs. The research was carried out in accordance with the prepared research procedure and concerned 178 marinas. The entire process was divided into stages with various research methods and techniques applied, including mathematical and statistical methods, participant observation, and internet resource exploration. The structure of the article and the method of presenting the results of the research were subordinated to the implementation of the goal.

## 2. General Classification and Characteristics of Services Provided in Marinas

In general terms services are activities that contain an element of immateriality influencing the customer, objects or real estate in its possession, but not transferring ownership (Payne, 1997). The basic features of the services are their intangibility (cannot be seen, tested, felt, heard or smelled before purchase), inseparability (cannot be separated from their providers), variability (quality of services depends on who, when, where and how they are provided) and perishability (cannot be stored) (Kotler, Bowen, and Makens, 2010). Properly positioning the service allows to stand out from the competition by providing customers with something more (superior) to the norms accepted (Cooper *et. al.*, 2008; Tribe, 2012).

According to the definition, yacht harbours (marinas) constitute a complex of port basins, hydrotechnical port structures, onshore structures and technical devices ensuring safe berthing and servicing of yachts, other vessels and floating devices (Mazurkiewicz, 2010). They can vary greatly in size, as underlined by the definition proposed by The Yacht Harbour Association [TYHA, 2007] that *a marina can range from a small yacht haven accommodating only a few boats to a multiple vessel harbour with a boat yard and commercial outlets*. They can also vary greatly in

many respects (Lam Gonzalez, León González, and León Ledesma, 2015) including in the scope of the service offer (BMF & RYA, 2020).

As in the case of commercial ports, any failure or unreliability in ports' services may result not only in the loss of dissatisfied customers but also potential customers who have read their opinions (Yeo, Thai, and Roh, 2015). In the case of yacht harbours, services constitute an important element of the tourist product (Diakonidze, 2019) and as tourist services, they are usually characterized by seasonality, which is a major difficulty at the planning stage and has a negative impact on financing dynamics (Luković, 2013).

The starting point for planning the services provided in the marina area should of course be the customer's needs. At the same time, it should be noted that for tourists, the services provided by other entities located near the marina are of great importance. Their comprehensiveness and quality may also affect the final assessment of consumers (Hernon and Nitecki, 2001).

Thus, yacht ports are typical service enterprises, providing various services for the needs of people and also for means of transport (water and land).

Consumers' needs are complex and diverse, which means that the services provided by ports must be technically heterogeneous, comprehensive and often complementary to each other. It often depends on the infrastructure owned by a given port with the use of which most services are provided (Biesok, 2013; Nowakowski 2011) and on human resources. A direct contact between employee and customer is crucial and can determine the degree of customer satisfaction, on the other hand it is what triggers quality demands and innovative processes (Năstase *et. al.*, 2010). Thanks to a wide range of services, yacht ports can more and more often become tourist destinations in themselves, and not only places providing shelter for sailors (Paker and Vural Altuntaş, 2016).

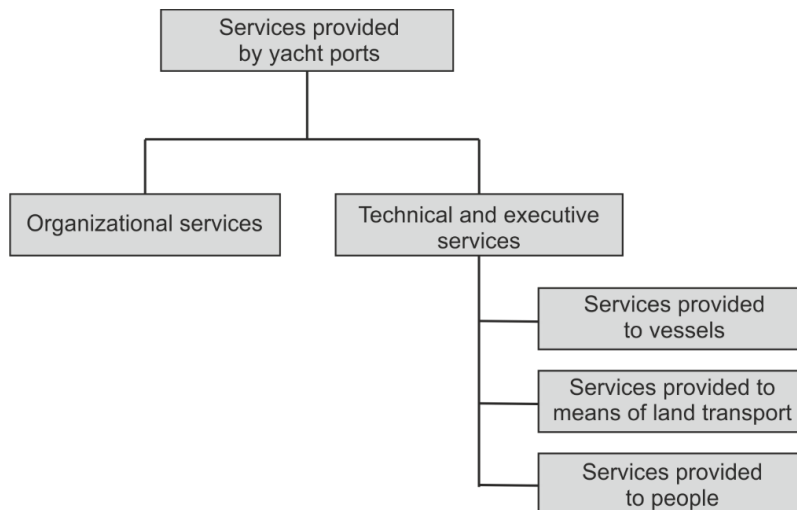
Taking the nature of the services provided by yacht ports as the criterion for this division, one can distinguish between organizational services and technical and executive services.

Organizational services consist in proper organization of the port's work, i.e. providing appropriate and timely orders for the performance of various types of work, skillful management of information flow between all organizational units of the facility and between the facility and cooperating entities. These services also include ensuring the availability of certain information to people using the port's offer (e.g. nautical, weather, marketing, tourist attractions, etc.). The implementation of this group of services is non-objective, because they are performed without involving the technical potential. Their basis, however, is an efficient information flow infrastructure (Panasiuk, Dobska, and Urban, 2016; Benevolo and Spinelli, 2018).

Technical and executive services, on the other hand, require the involvement of elements of the technical infrastructure of yacht ports (Kuźma, 2003; Klimek, 2009).

Among the technical and executive services, there are services provided to: vessels, means of land transport and to people. A simplified classification of services provided by yacht ports is shown in Figure 1.

**Figure 1.** Simplified classification of services performed by yacht ports



**Source:** Own study based on Kuźma, 2003.

The most frequently offered technical and executive services for vessels in yacht harbours include: mooring and berthing of vessels, landing and launching, winter storage, repairs, supply of spare parts and equipment, fuel, gas, electricity and drinking water, transport of units to and from the port, waste collection, as well as ensuring the safety of yachts and other units in the port area through supervision and monitoring.

Services provided for means of land transport include ensuring safe berthing and the availability of fuel.

Another category of services provided by marinas concerns people. These are: sanitary services, food supply, catering services, accommodation services, tourist information, nautical and weather information services, transport of tourists to and from the port, ensuring security in the port area through supervision and monitoring, as well as training and educational services.

As can be seen from the short characteristics of individual groups included in the technical and executive services, the basic element for ensuring an appropriate level of service for yacht port users is appropriate technical, operational and social

equipment (Wiktorowska-Jasik and Tołkacz, 2013). It is also important to adapt yacht harbours to the needs of elderly and disabled people, which is especially observed in Germany (Łapko, 2015).

Apart from the involvement of the suprastructure elements that function based on infrastructure, most services provided in ports require the involvement of employees (Klimek, 2009). Therefore, the competences and skills of the staff are of great importance in creating services of the appropriate quality. Professional service should be characterized, *inter alia*, by a different approach to the recipient (Marciszewska, 2014).

The service offer of yacht ports should take into account the requirements of various groups of sailors. It is especially important that the needs of the most demanding sailors and those who visit a given port most frequently are satisfied (Favro, Kovacic, and Grzetic, 2008). The service offer should be created in consultation with consumers, or at least based on research and observation of their preferences, so that sailors are co-creators of the offer, and not only its recipients (Tsiotsou and Goldsmith, 2012). The wider the range of services offered, the greater the likelihood that visitors to a given port will be able to meet their needs.

### **3. Methodology**

The article presents the results of the research in which the service offer of 178 marinas located in the southern Baltic region in Germany, Poland, Lithuania, the Russian Kaliningrad district and on the island of Bornholm belonging to Denmark was analyzed (Figure 2).

The analysis of the service offer applies to entities operating both in the marina area and in its immediate vicinity. The source of data used in the research process are materials published as part of the South Coast Baltic - Harbour guide for the South Coast Baltic project (Harbour guide..., 2019/2020), which is regularly updated in consultation with marina management, as well as internet resources, including a sailing portal (Marine wolves portal, 2020).

Due to the differences in the size of the analyzed regions and the different level of development of sailing tourism on the southern Baltic coast, the number of marinas in each of them is different. Hence, the following number of marinas in individual regions was tested:

- region 1: Zachodniopomorskie – West Pomerania (Poland) – 34,
- region 2: Pomorskie – Pomerania (Poland) – 42,
- region 3: Klaipeda Region (Lithuania) – 10,
- region 4: Bornholm (Denmark) – 21,
- region 5: Vorpommern (Germany) – 67,
- region 6: Kaliningrad Region (Russia) – 4.

**Figure 2.** Map of analyzed region

**Source:** Own study based on *Harbour guide...*, 2019/2020.

The detailed objective of the first part of the research process was to classify services according to the frequency of their appearance in the offer of the surveyed marinas, to determine the potential of the facilities expressed by the scope of their service offer, and to indicate what customer needs can be satisfied in their area. In this phase of research, the area was treated as a whole, without specifying individual regions.

In the next phase of the research, the structure of the set of these 178 objects was analyzed in terms of their service offer with the use of selected descriptive statistics, i.e. measures of central tendency (mean, median, lower and upper quartiles) and differentiation (standard deviation, minimum, maximum, coefficient of variation). The results are presented in tabular form as well as in a histogram. The structure of individual sets of objects was also analyzed in relation to these regions. Boxplots were drawn up to compare the distribution of the number of services available to sailors visiting marinas in different regions in terms of central tendency, dispersion and asymmetry.

In the last phase of the research process, the relationship between the number of services provided in the marinas of the South Baltic Sea and the total number of berths was analyzed. Due to the availability of data on the number of berths, this analysis was limited to 89 marinas (50% of facilities analyzed earlier). To present the results of the analysis, a histogram of the distribution of the number of berths in the marinas under study was used, as well as scatter plots of the number of these services and berths in relation to marinas in total and in individual regions separately.

#### 4. Results

As a result of the analysis of the service offer of the southern Baltic marinas, Table 1

lists the services that can be used while visiting a given facility and the frequency of their occurrence. Based on the data on the number of marinas offering individual services, these services have been classified into basic, complementary and optional.

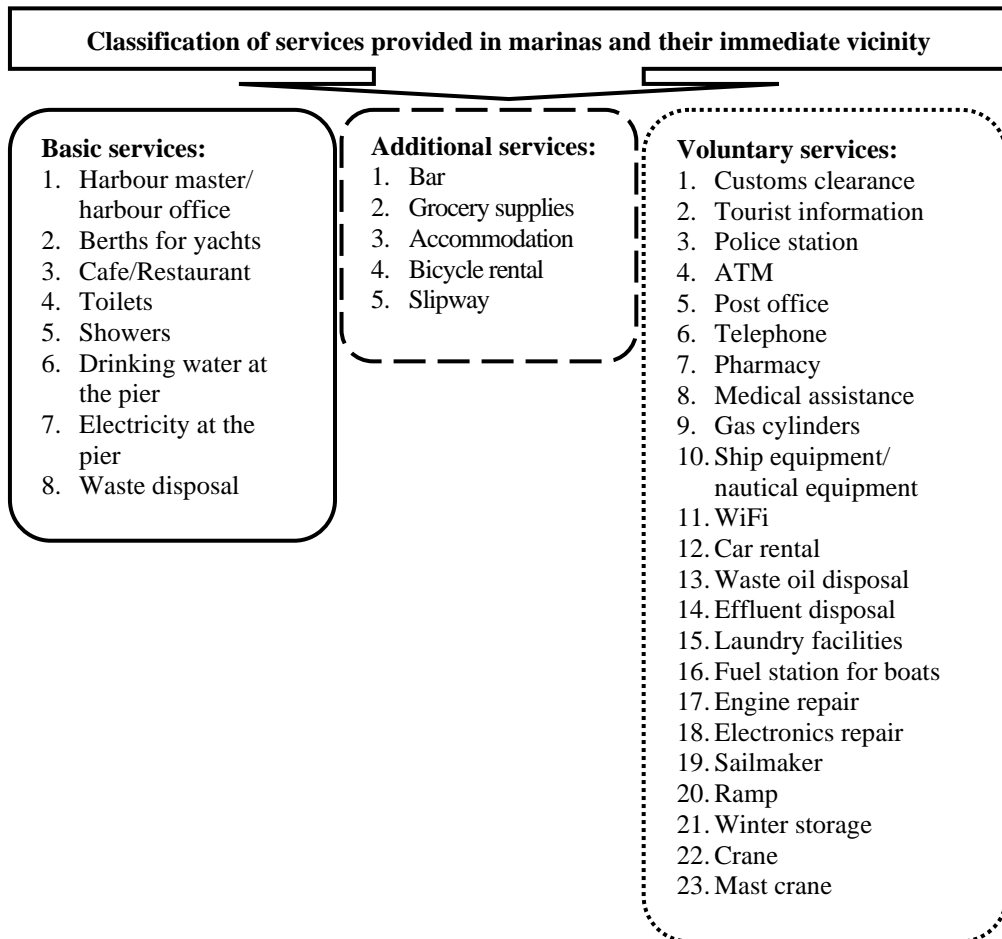
**Table 1.** Services provided in the marinas of the South Baltic Sea

No	Name of service	Number of marinas	No	Name of service	Number of marinas
1.	Harbour master/harbour office	138	19.	Car rental	22
2.	Berths for yachts	158	20.	Toilets	168
3.	Customs clearance	15	21.	Showers	164
4.	Tourist information	71	22.	Drinking water at the pier	165
5.	Police station	26	23.	Electricity at the pier	166
6.	ATM	59	24.	Waste disposal	152
7.	Post office	66	25.	Waste oil disposal	54
8.	Telephone	87	26.	Effluent disposal	61
9.	Pharmacy	53	27.	Laundry facilities	79
10.	Medical assistance	50	28.	Fuel station for boats	56
11.	Cafe/Restaurant	142	29.	Engine repair	69
12.	Bar	125	30.	Electronics repair	50
13.	Grocery supplies	125	31.	Sailmaker	48
14.	Gas cylinders	74	32.	Ramp	40
15.	Ship equipment/ nautical equipment	44	33.	Slipway	101
16.	WiFi	59	34.	Winter storage	71
17.	Accommodation	110	35.	Crane	77
18.	Bicycle rental	90	36.	Mast crane	19

*Source:* Own study based on Harbour guide..., 2019/2020.

Basic services were considered those which appeared in at least 75% of the surveyed marinas. It was assumed that complementary services are those that are provided in at least 50% of facilities, while the rest are optional services. Figure 3 shows the classification of services provided in marinas and their immediate vicinity.

As can be seen, the groups of basic and complimentary services are much smaller than the third of them. The presence of basic services on the premises of a given facility and its surroundings guarantees that sailors will only meet the basic needs that may arise during the voyage, i.e. the need to recharge the batteries, replenish water supplies or meet personal hygiene needs. Food services are also often available. As part of complementary services, access to accommodation services has also appeared. This may be important for people who intend to stay longer in the marina and stay overnight outside their own yacht.

**Figure 3.** Classification of services provided in marinas and their immediate vicinity

*Source:* Own study.

The most numerous and at the same time diverse group of optional services is. It is the services from this group that may be the factor determining the attractiveness of a given port and distinguishing it from the competition. Among them, some provide sailors with a comfortable stay in the marina and entertainment, but also those related to the technical maintenance of yachts. Most of them can be provided only with the use of specialized infrastructure (e.g. petrol stations, workshops, yards adapted to wintering boats, hangars, etc.), the provision of which requires significant financial outlays. This fact may explain their relatively rare occurrence in the area of the studied objects. It is also surprising that services such as WiFi access and an ATM are still not standard in marinas.

As part of the next stage of the research process, the structure of the set of these 178 objects was analyzed in terms of their service offer, using selected descriptive



statistics, i.e. measures of central tendency and differentiation. The results are presented in Table 2.

**Table 2.** Descriptive statistics of the number of services offered in the South Baltic marinas and in their immediate vicinity

No.	Selected descriptive statistics	Number of services
1.	Average	17
2.	Standard deviation	7
3.	Minimum	3
4.	Maximum	36
5.	Median	17
6.	Lower quartile	13
7.	Upper quartile	22
8.	Coefficient of variation [%]	37,68

*Source:* Own study.

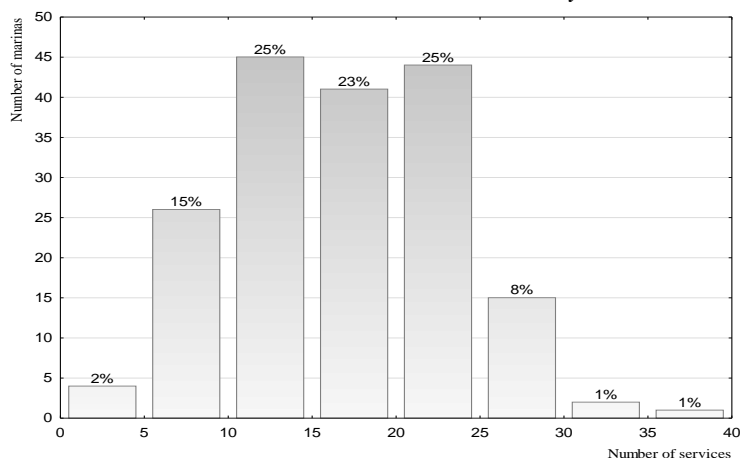
According to the results presented in Table 2, sailors visiting the analyzed marinas have access to an average of 17 services. On the other hand, a typical area of variation, in which there are about 2/3 of the units of the surveyed population (Sompolska-Rzechuła, 2007), i.e. marinas, is a range from 10 to 24 services. In 89 facilities (50%), no more than 17 services (median) are available. In 44 (25%) it is at most 13 services (lower quartile). However, when interpreting the value of the upper quartile, it can be stated that in 133 (75%) marinas, 22 services are provided at the most.

According to the coefficient of variation, the number of available services is a feature that differentiates the set of the analyzed marinas to an average degree. Its distribution is presented in the form of a histogram showing the size of the classes that are right-closed (left-open) compartments in Figure 4.

A small positive value of the asymmetry coefficient (0.12) suggests a slight right-skewness of the distribution. However, as shown in Figure 4, it is almost symmetrical and additionally bimodal. Symmetry is also demonstrated by the equality of the mean and median values (Table 2). On the other hand, two compartments are most populated (about 25% of marinas each). Most of the marinas (73%) allow the sailors using them to access 10-25 services (these are the three middle ranges of the histogram). Only four marinas were in the class with the fewest services. These are small facilities (the largest of them has 15 berths) and located far from larger cities. The one in which visiting sailors have the opportunity to use the fewest number of services, i.e. 3, is located in the German region. The remaining marinas in this group are Polish (West Pomerania), Lithuanian and Danish. The least numerous classes are the two with the highest number of services. There are two marinas in the penultimate one. One of them is a Polish (West Pomerania) facility of medium size but located in the vicinity of attractive tourist towns.

On the other hand, the second is the largest facility of this type on the Lithuanian coast (300 places for yachts) and one of the largest marinas under study. The Polish (Pomerania) facility located in a large city belongs to the last class. Sailors can take advantage of the largest range of services here - all analyzed services are available here.

**Figure 4.** Histogram of the distribution of the number of services provided in the marinas of the South Baltic Sea and their immediate vicinity

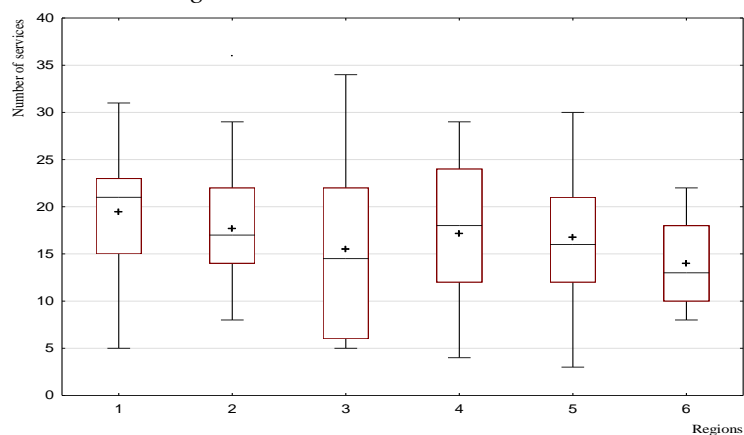


**Source:** Own study.

As previously mentioned, the marinas under study are located in six regions belonging to five countries. To compare the distribution of the number of services available to sailors visiting marinas in different regions in terms of central tendency, dispersion and asymmetry, boxplots were prepared - Figure 5. This illustrates the median, lower and upper quartiles, minimum and maximum of values (Aczel, Sounderpanian, 2018). Average rating values have also been added (marked with a plus in the graphs). The regions were marked as follows: West Pomerania (1), Pomerania (2), Klaipeda Region (3), Bornholm (4), Vorpommern (5), Kaliningrad Region (6).

In the West Pomeranian region (1), the highest average number of services available in the analyzed marinas was observed - 19. The lowest was in the Kaliningrad Region (6), where the maximum number of services was also the lowest - 22. It is the region with the least developed sailing infrastructure among the respondents. The most symmetrical distributions of the number of services were obtained for two regions: Bornholm (4) and Vorpommern (5). The first is a relatively small island extremely popular among sailors. In this case, the highest value of the upper quartile was recorded - 15 out of 21 marinas have access to at most 24 services.

**Figure 5.** Boxplots of the number of services available to sailors visiting marinas in the various South Baltic regions



*Source:* Own study.

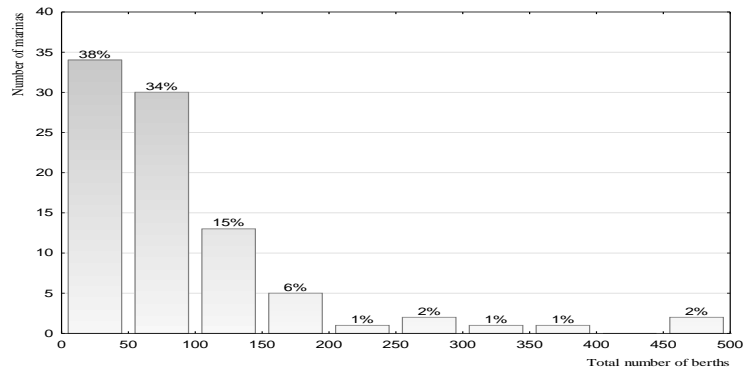
Among these 15 ports, 3 provide access to 18 services (the highest dominant among the analyzed regions). On the other hand, Vorpommern is the region with the largest number of marinas among the respondents. However, they are less differentiated in terms of the number of services than in the case of Bornholm - the values of the interquartile range and the coefficient of variation are lower. At the same time, the difference between the minimum and maximum values is greater, i.e. 25% of German marinas in this region allow access to 3 (minimum value) to 12 (lower quartile) services, and another 25% from 21 (upper quartile) to 30 (maximum value).

The distribution of the number of services in the Klaipeda Region (3) is noteworthy. In 50% of Lithuanian marinas, sailors have access to no more than 14 services (except for the last analyzed region, it is the lowest median value). Only in two facilities it is over 22 services, including the aforementioned marina offering 34 services.

In the Pomeranian region (2), one marina clearly differs from the others in terms of the number of services, therefore it was recognized as the so-called an outlier and excluded from the analysis. It is the aforementioned marina where the sailor can use all the analyzed services.

As the last element of the research process, an analysis of the relationship between the number of services provided in the marinas of the South Baltic Sea and the total number of berths was carried out. The results are presented in the form of a histogram (Figure 6) and scatter plots in relation to the marinas in total (Figure 7) and separately in individual regions (Figure 8).

**Figure 6.** Histogram of the distribution of the number of berths in the marinas of the South Baltic Sea



*Source:* Own study.

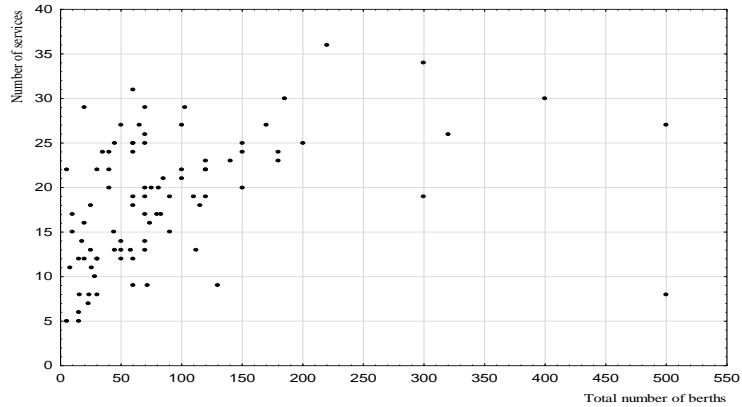
The marinas subject to this analysis (i.e. 89 of them) offer from 5 to 500 berths in total. On average, it is 92. However, a strong right-hand asymmetry of the distribution of this feature was observed (Figure 6), which means that in most marinas there are fewer berths than the average value. The median obtained shows that half of them provide no more than 70 places. In 22 (25%) facilities, no more than 30 places were located, and in the case of 66 (75%) no more than 112. Classes representing marinas with over 200 berths are much smaller - there are only 7 out of 89 (about 7%). Among them, there are 5 German, Polish and Lithuanian marinas.

The number of services available in their area varies from 8 to 36. A special facility is the German marina, which offers 500 berths and only 8 basic services. It is an urban marina geared towards short stays of sailors. The second of the facilities included in the last group is the Baltic Sea Resort, one of the most modern on the eastern coast of Germany - it offers 500 berths and 27 services. However, 34 marinas offer less than 50 berths, and another 30 - less than 100. The range of services provided in these 64 marinas is quite diverse, and their number ranges from 5 to 31.

Based on the analysis of 89 objects, a statistically significant low correlation was observed between the number of services provided there and the number of available berths - the linear correlation coefficient was 0.38. The situation is different in individual regions. The strongest correlation was noted in the case of Klaipeda Region (0.82). In this area, 6 out of 7 marinas have a number of berths ranging from 15 to 120. Two of the smallest of the analyzed Lithuanian facilities offer only 5 and 6 services to sailors. A moderate level of correlation (0.43) was observed for objects from the region of Vorpommern. The vast majority of these marinas (around 87%) allow the use of berths in the range of 10 to 185. A stronger linear relationship can be observed in relation to them. 5 German sites are large objects (300 - 500 berths). A moderate correlation (0.57) was also noted in the Pomeranian region. In this area, the vast majority are marinas with a maximum of 120 berths. It is worth noting that

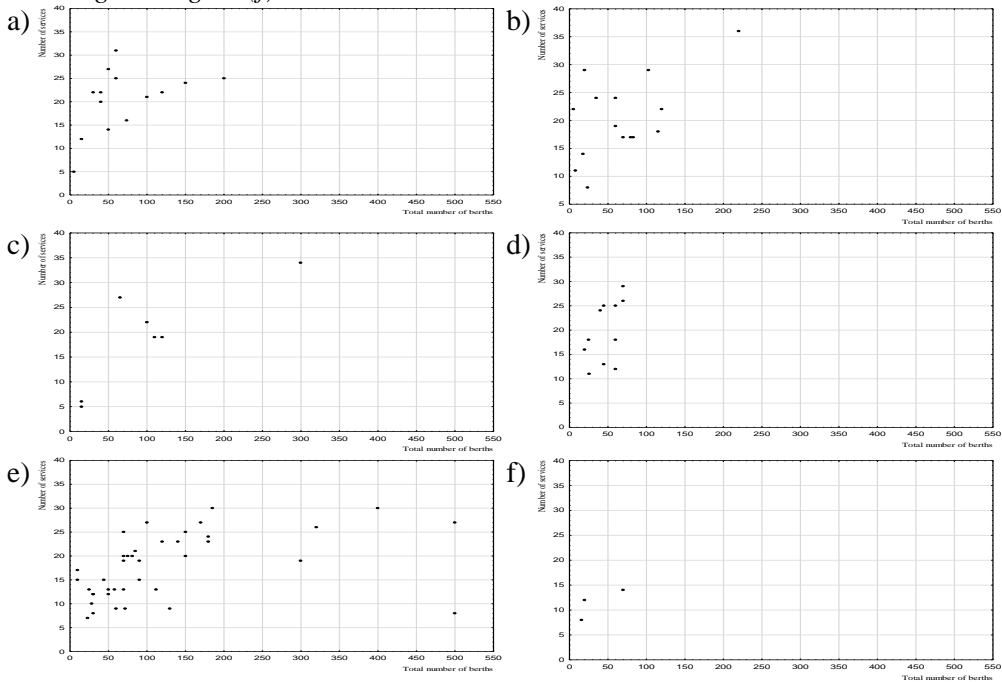
the smallest of the facilities (less than 50 berths) vary greatly in terms of the number of services, ranging from 8 to 29.

**Figure 7.** Scatter plot of the number of services provided in relation to berths in the marinas of the South Baltic Sea



Source: Own study.

**Figure 8.** Distribution diagram of the number of services provided in relation to berths in the marinas of the South Baltic Sea in individual regions: West Pomerania (a), Pomerania (b), Klaipeda Region (c), Bornholm (d), Vorpommern (e), Kaliningrad Region (f)



Source: Own study.

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In the remaining regions, no statistically significant linear relationship was found. In the case of Bornholm, all the marinas studied are relatively small, with a maximum number of berths of 70 and an average of 47. This may also be due to the sailing culture of the area. The number of services available varies from 11 to 29, with an average of 19.

## **5. Conclusions**

In order to be attractive to the customers, yacht ports must plan and implement services in order to meet their needs to the maximum extent possible.

Customer needs can vary greatly, some of them resulting from the individual characteristics of the persons concerned and therefore extremely difficult to predict. However, there are also those whose appearance is conditioned by various external factors, including the location of a given yacht port. The wide range of services offered by the port makes it possible to meet a greater number of needs. It can be a factor influencing the attractiveness of a given port and help build a competitive advantage.

As the research showed in the analyzed ports, the average number of services offered was 17. Among them, the most frequently repeated eight services were classified as basic services. These were services that met the basic needs of sailors for safe stopping, meeting physiological needs as well as water and electricity supply - necessary for their onward journey.

The port in the Pomeranian region, located in a large city, offered the most services. Sailors can take advantage of the largest range of services here - all analyzed services are part of that marina's offer. The research led to the conclusion that the proximity of a large city positively influences the attractiveness of the yacht port located in it. This is due not only to the expansion of the tourist offer but also to the complementation of the port's service offer. The highest average number of services available in the analyzed marinas was observed in the West Pomeranian region (also in Poland), while the lowest in the Kaliningrad region. The fewest number of ports were also observed there. The good result of the West Pomeranian region may be the result of the implementation of the West Pomeranian Sailing Route project in its area in recent years, under which nearly 40 yacht ports were modernized and built (with the support of EU funds). The Kaliningrad region is the only one that does not belong to the European Union and therefore may be overlooked by many sailors while cruising along the Baltic coast. Therefore, the lack of growing demand does not stimulate the development of the supply-side offer. There is also no access to EU funds, which in recent years have largely supported the development of port infrastructure in other countries.

The research did not show a strong correlation between the number of available berths in a yacht port and the number of services offered. However, this was the case

when considering objects from all regions together. Considering the regions separately, the situation was different. Three out of six showed a statistically significant linear relationship - from moderate to strong.

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