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ASSESSMENT OF THE ACTIVITY TO STOP A DECLINE IN THE NUMBER OF SEAFARERS IN THE EUROPEAN UNION - THE CASE OF POLAND

JEL classification: F61, F16, L52, Q38

Abstract

Shipping is, unquestionably, one of the most important determinants of efficient functioning of the contemporary world economy. It is the basis of maritime economy, the significance of which increases with the development of technology. New methods of exploring maritime resources and new opportunities of their use have caused that the European Union, inter alia, in the maritime economy has discovered possibilities to realise the Europe 2020 strategy. It has been confirmed by numerous initiatives on the levels of: union, macro region (i.e. Baltic Sea Region etc.), national. It turned out that the greatest weakness and threat in the achievement of the defined objectives is a decreasing number of European seafarers (especially officers). In this article the roots and the dimensions of that issue were described. The desk-research method as well as the pools method were used to find out the reasons which governed students' choice study at Gdynia Maritime University. The results of investigation constituted the basis to evaluate the effectiveness of the actions aiming to increase interest in work at sea.

Key words: blue economy, shortage of seafarers, maritime policy

1. INTRODUCTION

The process of expanding globalisation is possible due to maritime transport, which on one hand is a driving force of globalisation and on the other hand, is its beneficiary. Apart from transport, maritime economic activity is being undertaken in many areas: excavation of resources under the sea bottom,

production of electrical energy, aquaculture and many others. An increasing number of stakeholders causes that seas are becoming the arena of more and more intensive conflicts. The second common element connecting stakeholders is human capital with right qualifications and sea experience. This is becoming scarcer and scarcer. Shortages are becoming visible in maritime transport; the result of this could be a slower pace of development of new ways of exploiting sea resources. This situation is a growing concern, because in spite of the lack of reliable information about the market of sea based jobs and tendencies in its development, organisations and institutions on different levels undertake activities aiming to promote sea based jobs as attractive, offering versatile career paths. The purpose of the presented research in this article is to evaluate efficiency of initiatives undertaken to stop a decline in the number of seafarers.

2. THE ROLE OF MARITIME TRANSPORT IN THE CONTEMPORARY ECONOMY

The development of the world's trade exchange is determined, among others, by accessibility and effectiveness of transport. In the world's trade the most important role is played by maritime transport, the contribution of which in the international trade is estimated, depending on the source, as 80-90% (KOM(2009), p. 3; IMO, 2006, p. 2).

In the available statistics there is no data, thanks to which it would be possible to show separately the maritime transport's share in the world GDP. On the basis of the available, fragmentary information it is possible to assume that the contribution of maritime transport to the world GDP is 3.5 – 5% (IMO, 2006, p. 2; Stopford, 2009, p. 49; UNCTAD).

In the last four decades (1970 – 2013) the value of the world GDP expressed in American dollars (current prices) increased from 3000000 m USD to nearly 75000000 m USD (Figure 1). At the same time the value of the world's trade exchange went up from 320000 m do 18000000 m USD (calculated in current prices). The changes in the world GDP and the world's exchange were accompanied by changes in transport of cargo by sea. In the examined period it increased more than 3.5 times.

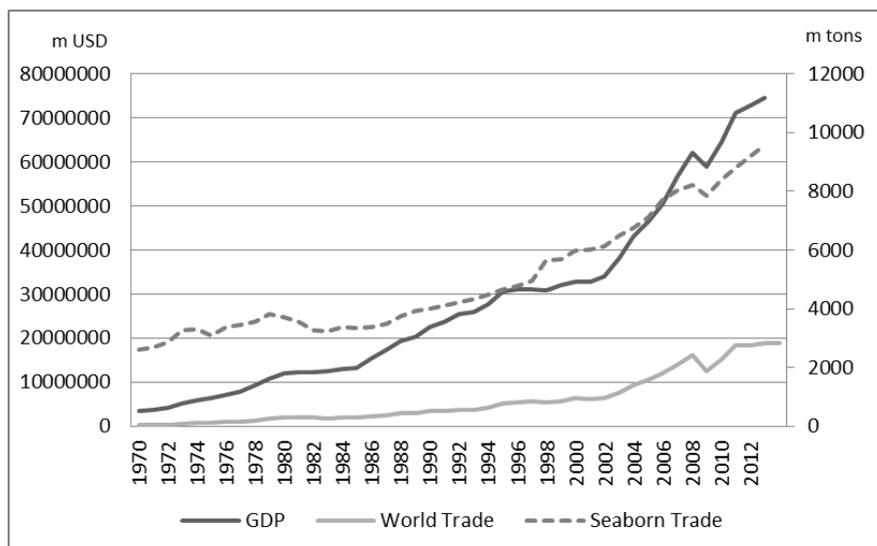


Figure 1. The value of world GDP, the value of global trade (m USD, current prices – left axe) and the volume of global freight by sea (m tons – right axe) in the years 1970-2013

Source: UNCTAD (2015), <http://unctad.org/en/pages/Statistics.aspx>, access 4.08.2015

The courses of characteristics illustrating the value of GDP, international trade and cargo transport show great convergence in the dynamics of their changes. The confirmation of this situation are correlation indicators between the examined variables (Table 1), estimated for the period 1970 – 2013 (44 random samples).

Table 1.

The correlation matrix

Marked correlation coefficients are significant $p < .05000$; $N=44$			
	GDP	International Trade	Seaborne Trade
GDP	1.000000	0.988298	0.982151
International Trade	0.988298	1.000000	0.981620
Seaborne Trade	0.982151	0.981620	1.000000

Source: author's calculations (Statistica ver.10)

The obtained results point out to strong, positive correlations among all the examined variables. They justify the statement that the condition of the world

economy and the demand for products brought from abroad are the highest determinants of the demand for transport services by sea.

Maritime transport, including deep sea shipping and short sea shipping, has the biggest contribution in handling the international trade of all the accessible branches of transport. An additional advantage is that maritime transport, contrary to the other branches of transport, can be both a substitute and a complementary service. It means that maritime transport can substitute, on some distances, land and air ways to carry cargo. The other way round is definitely less possible, due to at least two factors: natural (connected with carriage of cargo between the continents) and economical (relatively easy to obtain benefits of the economy of scale allow reducing transport costs more than in the other branches) (Corbett et. al., 2008, pp. 4 - 7).

The above presented data as well as interrelations among the world economy and the trade exchange, including the exchange by sea, make it possible to claim that similarly to money - maritime transport is indispensable for sustainable development of the world economy. The trade exchange is possible thanks to the increasingly modern and safe fleet of merchant vessels. Figure 2. shows changes in exploited merchant vessels over the period of the last 20 years.

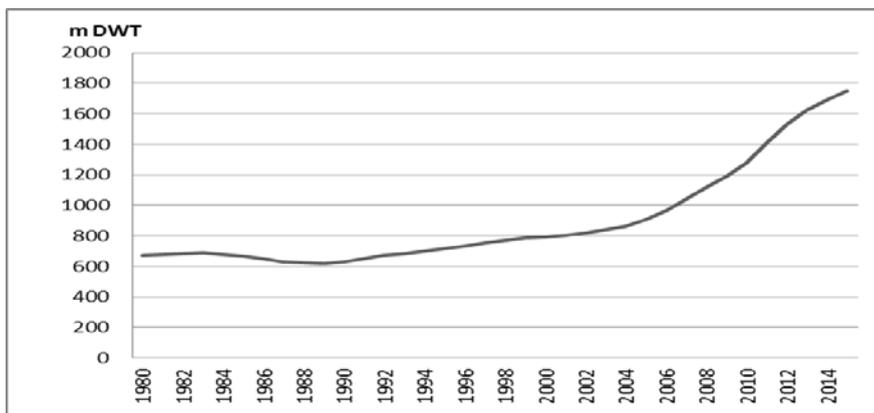


Figure 2. Total world fleet (m DWT)

Source: UNCTAD (2015), <http://unctad.org/en/pages/Statistics.aspx>, access 17.08.2015

Together with an increase in the cargo mass in the international trade there was a steady increase in the size of the fleet expressed by carriage capacity (on average 3% annual). The available statistic data concern a little shorter period – from the year 1980. Nevertheless, it is possible to notice that in as much as the changes in the world GDP influenced the volume of the international trade and the volume of cargo transported by sea, the carriage capacity only in the 1980s (1984-1989) decreased. In the other periods, when the situation of the world

economy was bad (1997, 1998, 2001, 2009), the size of the fleet increased at a clearly slower pace. In the whole examined period it increased more than twice.

In the light of the above presented data, from which it results that maritime transport, including the fleet of merchant vessels necessary for the world economy to operate well, increases, there appear a question about the sense of considerations concerning the significance of shipping for the contemporary economy. A great threat that can negatively affect maritime transport, which in turn can affect the world economy, is the problem of the insufficient number of seafarers. Table 2. presents prognoses concerning the number of seafarers (officers and ratings) needed and available on the market of sea based jobs.

Table 2.

Maritime labour market

	Demand				Supply	
	BIMCO /ISF	DREWRY Shipping Consultants *	Japan International Transport Institute	Japan Maritime Center	BIMCO /ISF	DREWRY Shipping Consultants *
2015						
Officers	720440	621200	460851	1458811	690199	606900
Ratings	803000	n. a.	671946		764000	n. a.
2020						
Officers	772198	639700	477208	1569148	764281	618000
Ratings	821000	n. a.	695795		791000	n. a.

Notes: * data for years 2014 and 2018, respectively

Source: EC (2011), p.33, Drewry (2014), p.1, Washizu, (2011), Japan Maritime Center (2013), p.2.

In the columns presenting the supply of seafarers there is no data coming from Japanese institutions. They claim that the supply of seafarers is so difficult to estimate and so changeable due to payment conditions, life situations, health and professional issues, etc. that there is no point in estimating it. Divergences among the values given by different institutions are considerable – JITI gives the data lower than the data of BIMCO by almost 40% and of Drewry by about 25%. So, are the prognoses accurate if the divergences are so large? Institutions, which decided to estimate both sides of the market of sea based jobs, are close in their predictions stating that the demand gap is going to increase. This is confirmed by organisations of entities that handle vessels operation – they report bigger and bigger problems connected with finding people with the right qualifications (Drewry (2012), Deloitte (2011), EC (2011), BCI (2009)).

2.1. The Significance of Shipping for the Economy of the European Union

Impacts caused by economic activity, especially when it creates elaborate supply chains can be divided on the basis of the criterion of a degree of the entity's engagement in a given activity. Generally, three channels of impact can be distinguished: direct, indirect and induced. Analysing impacts of activities of maritime transport enterprises, it is assumed that direct impact is produced by enterprises dealing with shipping. These are jobs and incomes of shipping enterprises. Indirect impact is produced by enterprises involved in supply chains indispensable for maritime transport. This impact is a result of the demand that shipping enterprises report for different types of products and services. These are jobs and incomes of suppliers of products and services for shipping enterprises. Induced impact is a result of the consumption demand reported by people employed in enterprises of maritime transport and enterprises from supply chains. It is a consequence of the demand reported by employees of enterprises directly and indirectly connected with shipping (Figure 3.) (Oxford Economics, 2015, pp. 4 - 5).

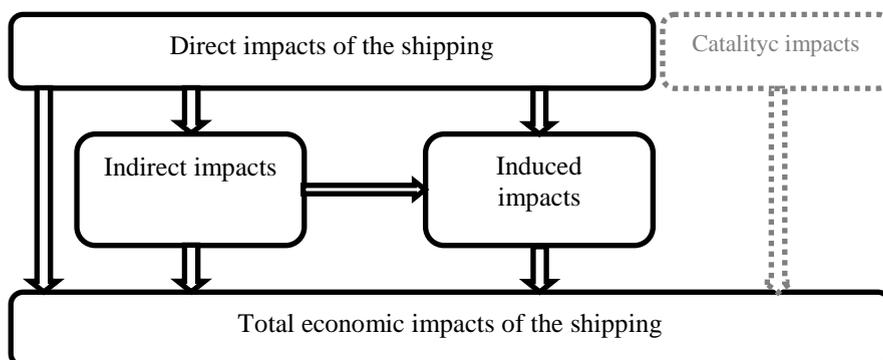


Figure 3. Total economic impacts of the shipping

Source: Oxford Economics (2015), p. 5; Sewell(2014), p. 5

In literature there is one more channel of impact of enterprise activity distinguished – this is catalytic impact also referred to as spin-off benefits. It is connected with improvement of effectiveness of economic activity – attracting, retaining and expanding economic activity as a result of enterprise's activity on a given territory (Sewell, 2014, p. 5 - 12). With regard to shipping enterprises, unlike the situation with seaports or airports - it is difficult to separate this impact unequivocally. Development of information technologies eliminated/reduced benefits of running business activity in the neighbourhood of shipping enterprises; in the present paper they will be omitted.

With regard to the European Union, maritime transport is the most important branch of transport used to handle the trade exchange. Maritime

transport operates 75 – 90% of the Union external trade and about 37 – 40% of the internal trade (*Making the World ...*, 2015; KOM(2009), p. 2).

Essential is the economic impact produced within maritime transport and thanks to it. In 2013 economic impacts amounted up to:

a) direct: gross value added contribution to GDP: 56 milliard € the same as in the previous year, employment: 615 000 (including 501 000 at sea), in comparison to the previous year generally the number of jobs increased by 4.2%, with regard to sea based jobs this increase was about 14%,

b) indirect: gross value added contribution to GDP: 61 milliard € an increase of 3.3% in comparison to the previous year, the number of jobs: 1 100 000, the same as in the previous year,

c) induced: gross value added contribution to GDP: 30 milliard € the same as in the previous year, the number of jobs: 516, 000), in comparison to the previous year the number of jobs decreased by 6.2% (Oxford Economics, 2015, pp. 25 – 35; Oxford Economics, 2014, pp. 3 - 6).

The multiple impact calculated on the basis of the above data, although similar in 2012 and 2013 (1 € value added generated in shipping, contributes to generating the value of 1.6 € in other branches) slightly increased from 2.589 in 2012 to 2.625 in 2013.

3. SEAS AS THE SUBJECT OF THE UNION REGULATIONS

Seas constitute an essential element of the European economy, not only with regard to economic aspects, but social aspects as well. They are exploited in many ways as: the way to transport people and goods, regulation of climate, a source of food, a source of energy and raw materials, a place of residence and recreation. Apart from positive aspects of the access to the sea, there also appear negative aspects, the scope, scale and influence of which are more and more experienced by citizens of Europe. The most important are: increasing congestion of routes around Europe, a rising level of waters (climatic changes), a wave of illegal emigrants from Africa and the Middle East.

Therefore, the EU undertook activities in 2006, starting from elaboration of the document “Green Paper”, which resulted in the development of an integrated maritime policy in 2007. An innovative solution laid out in the maritime policy is the approach to the issues concerning management of maritime areas, which consists in complex solutions taking into account all levels of decision-making with regard to horizontal and inter-sector planning. It means that planning should take into account all sectors connected with seas. Such an approach to the issue of maritime areas management will require development of

integrated maritime policies by member states (KOM(2006) pp. 2 - 5; KOM(2007), pp. 2 - 3).

To enable effective implementation of the activities so widely undertaken on different levels of management (region, country, European Union) and comprising many sectors, it is necessary to elaborate, implement and continuously enhance the following instruments: (1) maritime supervision (seafaring safety, protection of seas against pollution, safety of maritime borders of Europe), (2) maritime spatial planning (necessary spatial planning of deployment of economic activities against increasing competition in seas exploitation), (3) a rich and available source of data and information (creation of a complex and compatible system of collecting data) (KOM(2007), p.7).

The aims, in the realisation of which the integrated maritime policy is to help were grouped in five areas:

- maximising sustainable exploitation of seas and oceans – development/growth of coastal regions, maritime sectors;
- building a knowledge and innovations base for the maritime policy – expensive research, duplication of which is irrational;
- delivering the highest level of life in coastal regions (the number of population in coastal regions has considerably been increasing over the last ten years; in addition, coastal regions are tourist destinations for the majority of people in Europe – there appear problems with the economic development accompanied by simultaneous retention and improvement of the quality of both natural environment and life of inhabitants),
- promoting the leadership role of Europe within the international maritime economy (with regard to internal activities: encouraging member states to ratify the appropriate legal instruments, with regard to external activities: "sustainable scientific and commercial exploitation of the deep seas, protection of global marine biodiversity, improvement of maritime safety and security, working conditions, reduced ship pollution and the fight against illegal activities in international waters",
- popularisation of the maritime character of Europe – these are activities aiming at, among others, improving the image of sea based jobs, and "raising the visibility of the maritime character of Europe" (KOM(2007), p. 14).

3.1. Threats in the Development of Maritime Transport in Europe

European ship owners are the owners of 14,400 merchant vessels (30% of all exploited vessels), with deadweight capacity of over 579,000 thousand DWT (34% of the world's tonnage). Just over ¾ vessels belonging to European

ship owners are a foreign flag (Table 3). Only four countries (Croatia, Italy, Lithuania and Malta) operate most of their fleets under their national flag.

Registration of vessels under the flag of third countries results from the economic issues, first of all from: access to cheap capital, rich sources of cheap workforce, not a very rigorous attitude to the norms established on the international forum (KOM(2009) 8, p. 3).

Table 3.

Ownership of the European fleet, as of 1st January 2014 (ships>1000GT)

	Number of ships	DWT (thousand)	National flag (thousand DWT)	Foreign flag (thousand DWT)	Foreign flag (%)
Austria	7	50	0	50	100,0
Belgium	192	8114	3733	4381	54,0
Bulgaria	81	1279	254	1025	80,1
Croatia	112	3304	2235	1069	32,4
Cyprus	355	12716	6131	6585	51,8
Denmark	955	40504	13518	26986	66,6
Estonia	77	462	23	439	95,0
Finland	152	2039	971	1068	52,4
France	442	11798	4096	7702	65,3
Germany	3699	127238	15987	111251	87,4
Greece	3826	258484	70499	187985	72,7
Netherlands	1234	17203	6572	10631	61,8
Ireland	79	773	255	518	67,0
Italy	851	24610	18790	5820	23,6
Latvia	92	1227	48	1179	96,1
Lithuania	58	305	202	103	33,8
Luxembourg	77	1519	665	854	56,2
Malta	33	585	446	139	23,8
Poland	140	2803	43	2760	98,5
Portugal	54	940	124	816	86,8
Romania	94	1044	55	989	94,7
Slovenia	21	684	0	684	100,0
Spain	217	2206	692	1514	68,6
Sweden	339	6685	1311	5374	80,4
UK	1233	52821	8264	44557	84,4
UE total	14420	579393	154914	424479	73,3
World total	47601	1676853	-	-	-

Source: *Review of Maritime Transport(2014)*, pp. 33 - 37

If in Europe the costs of running shipping activity are less favourable than in the registers of third countries, it can lead with time to a total change of flags of the European fleets into foreign flags. The effects of such activities could have a severe influence on the whole maritime sector. Social dumping possible to

apply by ship owners on vessels outside Europe would result in redundancies of employees with sea experience, and the effect could be a loss of know-how. Due to perfect mobility of production factors involved in maritime transport enterprises, these enterprises with no difficulty could relocate their headquarters to territories outside Europe. The relocation of maritime transport enterprises overseas would definitely negatively affect other enterprises of the maritime sector, resulting in a reduction not only of direct economic impacts, but indirect and induced impacts as well.

Because of the above mentioned reasons the European Commission decided that: in the European Union the state aid not only should be retained, but in some cases improved, the European Union should aim at raising the quality of shipping, at the same time maintaining the conditions of fair competition among all entities participating in the international maritime transport (KOM(2009) 8, p. 4).

In the European Union the problem especially “dangerous” for development of maritime sectors is the more and more visible lack of qualified workers. “The growing shortage of professionals, officers and ratings entails the risk of losing the critical mass of human resources that sustains the competitiveness of the European maritime economy” (KOM(2009) 8, p. 4).

In the meanwhile the number of European officers is decreasing. Due to a growing gap also on the world’s scale a threat of shortages of qualified staff - not only in shipping, but in the whole maritime sector – is increasing.

3.2. Activities undertaken with the Maritime Policy to raise the number of Seafarers

With regard to threats the European maritime economy is facing, the European Commission recommended a set of activities, the aim of which is to raise attractiveness of jobs directly connected with seas. Sea based jobs are to be presented as jobs creating opportunities for development of skills, qualifications and social competences. Thanks to this, it is easy to determine paths in development of professional career and promotion. In turn, gaining unique experience while working at sea opens different possibilities of a job change, both within the maritime sector and outside it.

The second trend in activities increasing the number of people interested in sea based jobs are activities presenting the maritime sector, including seafaring, as a source of many inspiring and challenging places of work. Employing the best practices within promotional campaigns is to spur changes in the perception of the image of work at sea as dangerous and unattractive for citizens of the developed countries.

It will be necessary to support international organisations (mainly IMO, ILO), which undertake activities for fair treatment of seafarers. Ensuring the

appropriate protection of seafarers in the event of maritime accident, abandonment (seafarer and/or vessel), personal injury or death is essential because of two reasons. Firstly, because they are connected with the campaign to improve the image of seafaring; secondly, they aim at equalising the costs of seafarers' employment, which in the case of ship owners not fulfilling the obligations towards crews are definitely lower than in the case of honest ship owners.

The other proposals aiming to improve the conditions of work at sea can be outlined as: enhancing social conditions at a place of work and increasing the number of jobs, promoting information and communication technologies to improve health care at sea, personal communication of seafarers and distant learning, reducing excessive administrative burden of officers (KOM(2009) 8, p. 5).

4. EXAMING REASONS FOR UNDERTAKENING STUDIES IN POLISH MARITIME UNIVERSITIES

As in Europe the problem of a decreasing number of officers is getting more serious and its influence will be visible not only in seafaring, an essential question arises – how to encourage young people to choose a maritime career path?

Therefore, it is necessary to get to know what influences a decision to choose a maritime school, how important the environment is and how important - awareness gained from the earlier stages of education. This will enable constructing the appropriate tools to realise the maritime strategy on the Union and national level. Also the growing problem of shortages of maritime staff of the highest qualifications raises the question: can the activities laid out in the strategic documents on the Union level cause a greater interest in sea based jobs among young people?

To answer this question students of the first year of Gdynia Maritime University were surveyed (in February 2015). Students of only these specialisations were chosen, after graduation of which they acquire competences to work at sea. These were students of:

- Faculty of Navigation (field: Maritime Transport, a job title after graduating: maritime navigator), 114 students;
- Faculty of Marine Engineering (field: Mechanical Engineering and Machine Design, a job title after graduating: ship engineer) 154 students.

The choice of 1st year students was determined by the need to check their knowledge of the reality of life at sea, their reasons for undertaking studies, their ideas about advantages and costs of work at sea. Students of higher years will certainly answer such questions in a different way. With time they get

experienced with life at sea – through maritime practical trainings; moreover, studies at the university raise their awareness of the real conditions of life at sea.

Students were surveyed with a specially prepared questionnaire, which contained 19 questions (closed, semi-open and open). The survey was to be comprehensive, that is why there was no need to establish a method of sample selection. The possibility to survey all the students of the 1st year resulted from the fact that they have to attend both classes and lectures on a compulsory basis. It results from the regulations laid out in the Regulations Governing Studies at Gdynia Maritime University and the regulations of the STCW Convention.

In order to find out what made students choose a maritime field of studies, how conscious choice it was and what is the most important for young people in future life at sea, the following questions were asked:

1. How did they learn about studies at Gdynia Maritime University?
2. Who influenced their decision to study at GMU?
3. Are studies at GMU the first choice studies?
4. What reasons decided about their choice of studies?

Ad 1. Students were given a possibility to choose source/sources of information about the university from the following: (a) I searched myself the information about different universities, (b) I learned about the university from education fairs, (c) the university presented its educational offer in my secondary school, (d) I know about the university from acquaintances, who study here, (e) I know about the university from family members, who study or studied at GMU, (f) I read about the university on Internet forums. Another possibility was included in the answers – they could add other sources of information about the university (g). Students could choose more than one source of information.

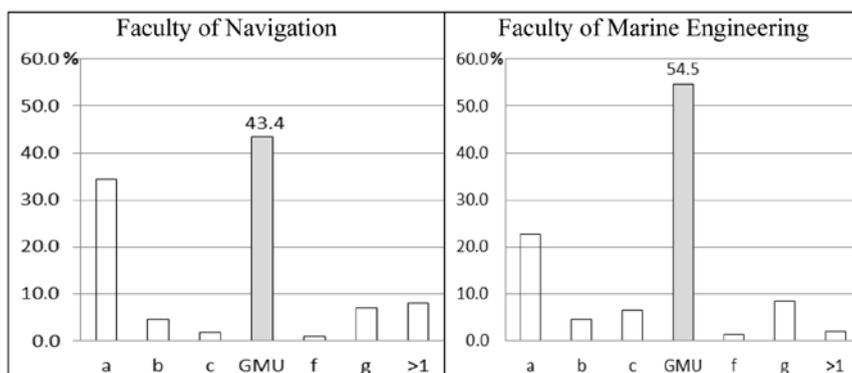


Figure 4. Sources of information about GMU

Source: author's calculations

Figure 4. presents a percentage of students indicating particular sources of information about studies at GMU. With regard to variants (d) and (e) – all indications in which such an answer appeared were summed. For students of both the faculties this was a dominant source of information. With regard to variant (g) versatile, often single indications appeared – a teacher, family/ acquaintances not connected with GMU, information about the university in media etc. Promotional activities undertaken by both the faculties bring about relatively small effects. 6.2% students of NF (Faculty of Navigation) and 11.0% students of MEF (Faculty of Marine Engineering) indicated as a source of information about the university – education fairs or the presentation of the university in their secondary school.

Ad 2. Answers to the question “who influenced your decision to choose the university” were to determine how wide is the group of stakeholders, who influenced a decision of future students to choose the university. 66% future navigators and 53% future engineers said that their decision about the studies at GMU was made by themselves and no one influenced them. In the other cases a big role was played by parents (if they pointed to one parent – definitely more often it was a father) and people from the circles of acquaintances (including these already studying at GMU).

Ad 3. The question if the chosen studies were the studies of the first choice, was posed only to check who undertakes studies on the examined faculties – people for whom GMU was the most important while making a decision about studies, or it was merely an alternative in case of a failure in some other university.

Students of navigation more often decided to study at GMU as the best thing for them. Only 16% respondents said they wanted to study in some other university. With regard to MEF students, as many as 25%, wanted to study in other universities. Students of both the faculties had different preferences about the university of the first choice and different reasons why they finally study at GMU. With regard to future navigators – they were interested first of all in studies in technical universities, on a smaller scale in military universities or other universities. The reasons they gave for not undertaking or not continuing studies there were: inappropriate health condition, inappropriate physical fitness (military universities), not so interesting classes and the lack of prospects after graduation (technical universities, universities). Students of Faculty of Marine Engineering for whom GMU was an alternative university, generally chose first technical and military universities. The reasons for not undertaking studies/ resignation from studies in military universities were the same as in the case of navigators, whereas they resigned from technical universities because of too high a level of education.

Ad 4. Students could choose more than one answer to the question about the reasons for undertaking studies at GMU. As the most important, irrespectively of the faculty, the following answers were chosen:

- a conviction about a secure job after graduation from GMU,

- a conviction about high earnings after graduation from GMU,
- a conviction about opportunities to visit the world after graduation from GMU (Fig.5).

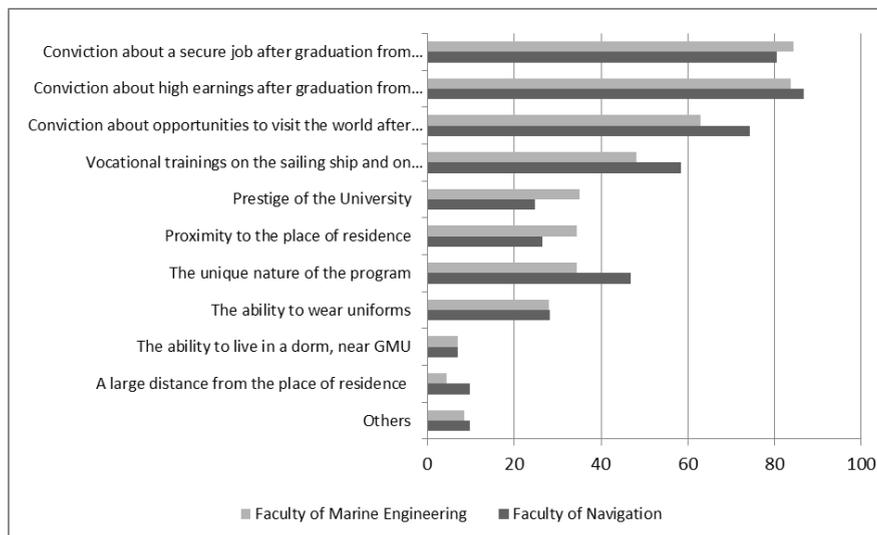


Figure 5. The reasons for undertaking studies at GMU

Source: author's calculations

Students of both the faculties differed slightly with respect to importance they assigned to particular reasons. Differences also appeared in the answer "others". Students having a possibility to give their own answer first of all wrote:

- passion and family tradition (NF),
- an interesting job, work at sea, an opportunity to live in Gdynia during studies (MEF).

The results obtained during the survey lead to the following conclusions:

- the university does not actively engage in promotional activities, promotion is either limited (from the point of view of territories, merits) or ineffective,
- an information campaign should also target other groups than youth at secondary schools – a decision to study is often made together with parents,
- students choose the university having the conviction about a secure job, high earnings and opportunities to visit the world after graduating,
- for respondents studies at GMU as well as a future job are perceived as prestigious – more than 25% students gave a reason for the choice of studies - a possibility to wear a uniform during studies.

5. CONCLUSIONS

Maritime transport due to limited possibilities of being substituted by other modes of transport conditions, but is not sufficient for, efficient functioning of the world economy. For the last decade of the 20th century a dynamic growth of merchant fleet has been observed (expressed both by numbers and deadweight). The phenomenon has been accompanied by a risk of the lack of the appropriate number of qualified crews. The scale of this phenomenon is difficult to estimate – because of the characteristics of the market of sea based jobs and its global range, institutions examining demand and supply give the data in different perspectives and their values differ from one institution to another considerably (differences are up to 40%).

Shipping is an important element of the economy because of its basic function. Besides its usefulness resulting from its essence, it generates economic indirect and induced impacts. In Europe they are higher than direct impacts.

The European Commission sees the potential of maritime transport and other traditional maritime branches as well as possibilities of developing new ways of exploitation. With regard to increasing threats for the community and the European economy the Commission elaborated a number of strategic documents, the aim of which, among others, is to increase the number of seafarers through a campaign promoting sea based jobs and to enhance considerably the conditions of work and life at sea.

The survey of GMU students proved that the knowledge about opportunities to gain qualifications for sea based jobs is not widely spread. The main reasons are: a secure job, high pay and opportunities to visit the world (in students' opinion). It seems that because of such formulated expectations of young people towards studies – the appropriate information campaign could favour recruitment of students, for whom the university would constitute the beginning to a career path at sea and not only a substitute of some other technical university.

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