

An Investigation of the Structure of Fixed Assets of Construction Companies in the Context of Coastal Area Development

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Abstract

The construction sector has a direct influence on social and economic development, which is why this article investigates the structure of fixed assets of construction companies in Constanța County in the context of coastal development to reveal how they can generate economic benefits and provide opportunities in the context of maritime spatial planning (MSP). The MSP can be a tool that can integrate and address the growth potential of the blue economy, even though tools for analyzing the economic effects of planning decisions are scarce. Starting from comparative structural analyzes regarding the fixed assets of construction companies located in Constanța County, the research objective was to obtain qualitative assessments on how economic resources can generate stimulation of coastal development.

Key words: fixed assets, construction companies, Constanta county, coastal area development, Maritime Spatial Planning (MSP)

J.E.L. classification: M21, O10

1. Introduction

Maritime Spatial Planning (MSP) is seen as a means of promoting the sustainable growth of the blue economy (Directive 2014/89/EU), as a practical way to create and establish a more rational way of organizing maritime spatial use and interaction among its uses, to ensure the balance between the need for development and the need to protect marine ecosystems and to achieve social and economic goals, set in a transparent and planned manner (Ehler and Dover, 2009).

Social and economic pressures are stressing coastal areas. Thus, the use of coastal lands induces the main man-made threats through coastal urbanization as a result of the concentration of buildings very close to the sea, the development of uncontrolled tourism and the development of recreational facilities, hydro-technical constructions of activities in coastal areas, etc. All these major man-made activities in the coastal area also involve construction works.

Potentially, MSP is a tool that can integrate and address the growth potential of both emerging sectors and traditional branches of blue economies (Schultz-Zehden, Weig, and Lukic, 2019).

The construction field is extremely wide, both at the national and European levels. Developing countries are largely dependent on the construction sector to implement sustainable development (Rafiq et al., 2021).

The construction sector has a direct influence on the social and economic development of the circulation of money. Therefore, the lack of adequate construction infrastructure results in underdevelopment of a country's sectors, an underdeveloped economy, an insufficient living standard, and an unbalanced income distribution. These are also the factors that contribute to the economic failure of a country (Alaloul et al., 2021).

2. Literature review

The development of the Romanian coastal area must be seen as a multifaceted concept, containing four pillars - economic, social, environmental, and cultural - and several dimensions, including a spatial/territorial one (Petrișor, 2014); sustainability covers all areas and sectors in which development takes place (Petrișor, 2017). Territorial development is also closely linked to the construction industry, which has a strong influence on the three aspects of sustainability: environmental, economic, and social (López Ruiz, Xavier and Santiago, 2020), cooperation between different territorial actors - companies, institutions, and citizens who opt for entrepreneurship and independent activities - can contribute to meeting the needs of the socio-economic context and can contribute to sustainable territorial development (Pérez-González and Valiente-Palma, 2021).

Through initiatives in the field of maritime spatial planning, the MSP can provide greater confidence and security for investors (Directive 2014/89/EU). Commercial and industrial stakeholders should play an important role in the MSP because such planning affects the preconditions for business operations in marine and coastal areas (Luhtala et al., 2021). Also, for business sectors, especially for those composed mainly of local, small and medium companies, the stake of MSP can be very high (Jentoft and Knol, 2014).

The construction sector is a key area that has a significant impact on the economy and the environment that contributes to economic growth, provides direct and indirect employment opportunities, meets people's needs for buildings and facilities (Norouzi et al., 2021). Its activities ensure the construction, maintenance, modernization, reconstruction, and demolition of construction structures. The construction industry has defined sustainability as meeting the growing demands of construction and infrastructure by balancing environmental protection, social diligence, and economic prosperity (Bamgbade, Nawi and Kamaruddeen, 2017).

And in the construction sector as well, companies are the basic factors of the transformation process, because they are the main actors that sell new products and services and generate economic value through it (Li et al., 2021). Assets are those means by which a company can secure an income for several years and is an essential notion in business and accounting because they are economic resources that can generate economic benefits in the future for the company that owns them.

Investments play an extremely important role, the most important component of the investment being the investment in fixed assets, decisive in the formation and development of the industrial structure (Wang, Qi and Shu, 2020). *Fixed assets* are assets and values that, unlike current assets, have a useful life of more than one year, ie they are not consumed from the first use and are divided into three categories: property, plant and equipment, intangible assets, and financial assets.

Tangible fixed assets (also called tangible or fixed assets) are goods with material content used by economic agents for a long period in the process of production of goods or provision of services (land and construction, technical installations, machines, machinery, means of transport, office equipment, etc.).

Intangible assets (also called intangible, or immaterial assets) are non-tangible assets (non-monetary identifiable) held for use in the production process or the provision of services (patents, licenses, trademarks) and include development expenses, concessions, licenses, patents, trademarks, goodwill.

Financial fixed assets refer to the financial amounts invested by the company in the long term in the form of securities and receivables, to obtain income from dividends and interest (shares, long-term loans) and which bring investors various gains.

The economy can be developed based on investment, and this is only possible through construction. Thus, the development of the coastal area is possible and due to investments in the construction sector that contribute decisively to this result (Petrișor and Petrișor, 2018), the benefit of rehabilitation works in the Romanian Black Sea coastal area has attracted investors willing to develop the area either by housing construction or by building other accommodation and related activities, which generated an increase in the revenues of companies with positive implications on the local budget (Filip, Stan and Vintilă, 2016).

Weig and Schultz-Zehden (2019) argue that maritime spatial planning (MSP) is a complex approach that faces multiple integration challenges, and although tools for analyzing the economic effects of planning decisions are scarce, there is room for improvement in the integration of economic, social and cultural perspectives.

3. Research methodology

The purpose of this article is to investigate the structure of fixed assets of construction companies in Constanța County in the context of coastal development to reveal how they can generate economic benefits and provide opportunities in the context of maritime spatial planning (MSP).

For the analysis, we used the data provided by the National Institute of Statistics of Romania (INSSE) and the Ministry of Public Finance (ANAF / National Agency for Fiscal Administration) for the calendar year 2019. 2019 was considered a reference year before the Covid-19 pandemic, and at the same time, is the last year with available data. Data processing and obtaining the indicators used in the statistical description were performed using the Statistical Program for the Social Sciences (SPSS). The research was based on the statistical analysis of several series of distribution, using a series of specific parameters, such as the average level and relative sizes, through which we reproduced the specific features of the analyzed community. The introduction in the analysis of a considerable number of companies, allowed us to obtain a synthetic image of the economic indicators regarding the assets of the companies in the field of constructions located on the territory of Constanța county.

Starting from comparative structural analyzes regarding the fixed assets of construction companies located in Constanța County, the research objective was to obtain qualitative assessments on how economic resources can generate stimulation of coastal development. The analysis confirmed our hypothesis, namely that economic resources influence the level of investment generating economic growth in the county and sustainable development of the coastal area.

4. Findings

The analyzed database that includes all companies in Constanța County whose main activity is “constructions” was formed by applying stratified selections: CAEN code, selecting companies with codes between 4100 and 4400, and the financial result, selecting companies that have made a profit.

This group includes the following sub-activities: 4110 Real estate development (promotion), 4120 Construction of residential and non-residential buildings, 4211 Construction of roads and highways, 4212 Construction of surface and underground railways, 4213 Construction of bridges and tunnels, 4221 Construction work for utility projects for fluids, 4222 Construction work for utility projects for electricity and telecommunications, 4291 Hydrotechnical construction, 4299 Construction work for other engineering projects n.c.a., 4311 Demolition work for construction, 4312 Land preparation works, 4313 Drilling and boring works for construction, 4321 Electrical installation, 4322 Plumbing, heating, and air-conditioning works, 4329 Other construction works, 4331 Plastering works, 4332 Joinery and carpentry works, 4333 Flooring and wall cladding works, 4334 Painting, whitewashing, and glazing works, 4339 Other finishing works, 4391 Roofing, framing, and terrace construction works, 4399 Other special construction works n.c.a.

Table 1 presents the structure of assets by subgroups of activities according to the CAEN code in the field of construction, the number of companies, and the average level of fixed, tangible, and financial assets.

Table no. 1 Structure of assets by subgroups of activities according to the CAEN code in the field of Constructions

CAEN Activities		Fixed assets	Intangible assets	Tangible fixed assets	Financial assets
4110 Real estate development (promotion)	Mean	4664578.76	2807.15	4566777.67	1242817.93
	N	98	27	96	15
4120 Construction of residential and non-residential buildings	Mean	771722.59	5769.98	869879.93	43150.26
	N	653	259	571	133
4211 Construction of roads and highways	Mean	3798761.50	96663.12	3352344.66	2157368.14
	N	30	17	29	7
4212 Construction of surface and underground railways	Mean	1686660.20	7265.50	1682919.20	2087.00
	N	5	2	5	2
4213 Construction of bridges and	Mean	216675.00		216675.00	

tunnels	N	1		1	
4221 Construction work for utility projects for fluids	Mean	648307.95	602.11	587600.41	147794.11
	N	22	9	22	9
4222 Construction work for utility projects for electricity and telecommunications	Mean	745535.00	975.43	1035703.00	198601.00
	N	10	7	7	1
4291 Hydrotechnical construction	Mean	1921047.55	5376.33	1827620.73	168594.33
	N	11	3	11	6
4299 Construction work for other engineering projects n.c.a	Mean	2662967.28	4568.38	2784458.82	70133.00
	N	18	8	17	8
4311 Demolition work for construction	Mean	11457.50	1095.00	10910.00	
	N	2	1	2	
4312 Land preparation works	Mean	476494.56	509.00	535992.75	
	N	9	1	8	
4313 Drilling and boring works for construction	Mean	304615.60	4410.67	303200.90	915.00
	N	10	3	10	1
4321 Electrical installation	Mean	347603.54	2195.59	384827.08	95254.72
	N	139	66	118	29
4322 Plumbing, heating, and air-conditioning works	Mean	159228.39	7492.29	160275.55	20201.02
	N	208	77	198	40
4329 Other construction works	Mean	332526.75	3174.22	313342.06	109090.00
	N	20	9	18	9
4331 Plastering works	Mean	151713.33		151713.33	
	N	6		6	
4332 Joinery and carpentry works	Mean	25896166.65	1087.90	314985.86	157453416.71
	N	43	20	36	7
4333 Flooring and wall cladding works	Mean	324975.87	2126.00	355596.58	351614.00
	N	23	7	19	2
4334 Painting, whitewashing, and glazing works	Mean	105074.82	21544.25	106606.80	1192.67
	N	11	4	10	3
4339 Other finishing works	Mean	140392.38	272.33	187053.67	
	N	8	3	6	
4391 Roofing, framing, and terrace construction works	Mean	129870.57	301.50	148454.33	5921.67
	N	7	2	6	3
4399 Other special construction works n.c.a	Mean	897303.69	10042.16	890688.00	208893.86
	N	67	19	64	14
Total	Mean	1752413.42	8038.97	1029994.81	3989496.67
	N	1401	544	1260	289

Source: Authors' computation

In the most used context, the construction covers complete processes involved in the development of buildings, infrastructures, installations, both civil and industrial, as well as associated activities that make possible the existence of the developed works. The further development of an organizational entity depends on the investment decision which is a strategic decision and is an integral part of the general policy of the company, the management of the entity is allowed to perform economic and financial analysis, influencing the decision-making process (Aivaz, 2018b).

Therefore, the companies whose main activity is "constructions" also substantiate the investment decision that leads to a capital asset made in the present, with the hope of future profitability of the company.

Table 1 highlights the structure of fixed assets by subgroups of activities according to the CAEN code for construction field companies in Constanța County. Thus, it is observed that the average value of fixed assets of 1752413.42 lei in 2019 is characteristic of 1401 companies analyzed, divided into

three categories. The investment in tangible assets was made by 544 economic agents with an average value of 8038.97 lei, compared to the value of intangible assets of 1029994.81 lei made by 1260 companies and financial assets in which the financial resources invested by 289 companies are on average 3989496.67 lei.

The analysis of the data in Table 1 allows the formulation of some findings. Thus, the sub-activity of *Carpentry and joinery works* (4332) is by far the most spectacular in the group, which for 43 companies has an average of fixed assets of 25896166.65 lei. However, the investment interest of this subgroup is in the form of securities and receivables, to obtain income from dividends and interest, the value of financial assets being 157453416.71 lei, but only for 7 companies. These data show that although sustained investments have been made, companies are not doing very well financially.

The sub-activity *Real estate development (promotion)* (4110) 98 companies have an average of fixed assets of 4664578.76 lei, 96 companies invest in tangible assets, registering an average level of 4566777.67 lei, which is explained by the very concern for the development of real estate projects, pooling of financial and technical means for the construction of residential (residential) or other (non-residential) buildings. The promotion and development of residential, commercial, or industrial projects involve the purchase of land or real estate for the subsequent sale of construction projects. This sub-activity is closely related to that of the *Construction works of residential and non-residential buildings* (4120) in which the average fixed assets achieved is 771722.59 lei for 653 companies. The low level of financial and intangible assets of this subgroup shows a significant vulnerability to the stability of the local economy.

The subgroup of *Road and highway construction works* (4211) has the average fixed assets of 3798761.50 lei for 30 economic agents, the average value of tangible assets of 3352344.66 lei for 29 companies, and the average value of financial assets of 2157368.14 lei for 7 companies. Road and highway construction works are complex works that are part of the category of heavy construction, have a long execution time, and require a high concentration of material and technical resources. The construction and maintenance of the transport infrastructure are activities with a strong multiplier effect, which create many jobs and boost the economic development of the area; there is a two-way relationship between the transport infrastructure of an area and its economic development, as evidenced by how these companies decide to invest.

The investments of the companies from the *Hydrotechnical constructions* subgroup (4291) are mainly in fixed assets with an average value of 1921047.55 lei and tangible fixed assets with an average value of 1827620.73 lei (11 companies), which from an economic point of view and, why not, from an accounting point of view, is called real estate investment (land, buildings). Thus, investments in property, plant, and equipment must have the effect of improving their initial technical parameters and leading to future economic benefits in addition to those initially estimated. The data are supported by the fact that, in recent years, the Romanian coastal area is in a process of implementing solutions and techniques specific to coastal engineering used for its rehabilitation and protection works, works that indirectly generate major benefits in local and regional development (Filip, Stan and Vintilă, 2016).

A sensitive issue in the coastal zone is land use, land cover, and land use changes which are a consequence of the conflict between economy and nature (Petrișor, Sirodoev and Ianoș, 2020), however, land use indicators for effective planning, aim to maximize global benefits, strictly control the development and construction of environmentally sensitive areas along the coast and are superior to urban planning by the destruction of the coastal zone (Su, Fan and Fu, 2020).

Table 2 presents the structure of assets by the form of ownership of construction field companies, on each CAEN group, the number of companies, and the average level of assets related to the analyzed year, 2019.

Table no. 2 Structure of assets by the type of ownership of Construction field companies

Type of ownership		Fixed assets	Intangible assets	Tangible fixed assets	Financial fixed assets
Companies with domestic-foreign private-state capital (state <50%)	Mean	1033400.00	5663.00	1027737.00	
	N	1	1	1	
Craft cooperatives	Mean	948919.00		1897628.00	210.00
	N	2		1	1
Autonomous directions/administrations	Mean	12772754.50	16432.50	12579290.50	354063.00
	N	2	2	2	1
Trading company with the state capital privatized during the reporting year	Mean	138915.00		138915.00	
	N	1		1	
Trading companies with full state capital	Mean	3314627.33	1472168.00	2781434.67	127410.00
	N	3	1	3	1
Limited liability companies	Mean	893298.67	5224.96	954302.98	175272.28
	N	1369	529	1229	270
Joint-stock companies	Mean	51897642.09	8954.82	3842953.30	69072458.69
	N	23	11	23	16
Total	Mean	1752413.42	8038.97	1029994.81	3989496.67
	N	1401	544	1260	289

Source: Authors' computation

Construction works carried out by public and private organizational entities can be analyzed in terms of contribution to increasing the economic value of the Romanian coastal area, the rigor and compliance of financial reports ensure the quality and accuracy of the information and are key features for sustainable development (Munteanu, 2020). Various actors in the construction business sector are working together to create better conditions for economic growth, generate new jobs, and thus contribute to local economic development (Aivaz, 2020).

The analyzed data revealed that *joint-stock companies* have major investment decisions for future returns, so in 2019, the average fixed assets is 51897642.09 lei and tangible fixed assets are 3842953.30 lei for 23 companies, and the average financial assets is 69072458.60 lei for 16 companies, the latter looking for the most advantageous placement for cash. These companies have the share capital consisting either only of money or money and other assets and/or receivables and is represented by shares issued by the company. This typology of companies is also concerned with the acquisition of buildings to be used by the entity as an administrative headquarters, which explains the high value of tangible assets.

Another type of construction company that recorded high financial values in investments in 2019 is the *autonomous directions/administrations* for which the average value of fixed assets is 12772754.50 lei and tangible fixed assets of 12579290.50 lei for 2 companies. This type of entity is set up to carry out activities of national or local interest and decides on the investments to be made, according to its object of activity, and which are financed from own sources, bank loans or allocations from the state budget, or, as the case may be, from local budgets.

Public investments are not enough for the sustainable development of the coastal zone; private investors are also needed to finance construction projects; construction sustainability measures are challenging because the built environment is a complex system that is characterized by huge flows of resources (Bamgbade, Nawi and Kamaruddeen, 2017).

5. Conclusions

The implementation of investment programs by construction companies often uses a mixture of public funding and land use tools, leads to changes in the labor market, creating an additional need for labor in sectors that prepare and carry out investment activities (research-design, construction, production of equipment and work installations, etc.), their economic resources being necessary for the social and economic development.

Schultz-Zehden, Weig and Lukic (2019) showed that blue businesses are a fundamental part of coastal and maritime communities and culture, their inclusion helps to develop the well-being of communities and the conservation and sustainable use of coastal and marine resources.

When planning the maritime space, it is necessary to take into account commercial stakeholders, because MSP involves risks, but can also provide opportunities to reduce vulnerability (Jentoft and Knol, 2014).

We believe that the involvement of the construction business sector in MSP from the perspective of contributing to coastal investments is appropriate; for the elaboration of the maritime spatial plan for the Black Sea cross-border area, the economic component must be taken into account, which represents an impetus for a wider development along the coastal area (Vintilă et al., 2017).

The present study, like other concerns, proposes an extensive area of analysis presenting a comparative empirical study of the structure of assets at the level of a field and can be corroborated with a series of efficiency indicators in the near pre-Sars-Cov-2 period (Aivaz, 2018a). The research area is also interesting from the perspective of the fact that the chosen geographical area, the territory of Constanța County, includes a substantial part of the coastal area, focusing on infrastructure, especially since Romania is a country with an emerging economy, in which fluctuations financial indicators can sometimes take on unexpected values (Aivaz, 2021).

Future studies will introduce, for comparison, in the analysis the financial data of construction companies from 2020, the year in which the Covid-19 pandemic began. This is because recent studies (Perillo et al., 2021) on the influence of the Covid-19 pandemic on coastal development and implicitly the construction sector state that the pandemic response and sustainable coastal development planning must take into account this complexity and the associated uncertainties which shape political provisions and processes.

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