Economic vitality of Polish suburbs

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Abstract — For over 25 years, Poland has been undergoing major political, social and economic transformations. The country’s system changed from a planned economy to a free-market, neo-liberal one. The effects of these changes are visible on several levels, including the field of urban planning, where they manifested themselves as the birth of the suburbanization process. In the field of economics, it could be noticed that since 1989, the SME sector has been awakening very dynamically.

Correlation of the parallel development of these two phenomena has led the authors to pose a question about the emerging potential links between the occurring processes i.e. - the process of the urban sprawl and the development of the SME sector. In this context, a thesis was established about emergence of the so-called “entrepreneurship nests”, made up of a dispersed urban tissue with residential functions intermixed and high intensification of economic entrepreneurship, in the Polish suburb areas.

To identify the research problem, a two-pronged research in the fields of urban planning and economic research was adopted. The Gdansk Metropolitan Area (GMA), consisting of three central cities and 31 towns and adjacent municipalities, was the subject of research. Municipalities with the highest suburbanization rate were established on the basis of the migration balance. Subsequently, business entities in those areas were identified with their business activity measured by the location quotient (LQ).

The results of the classification of the units within GMA (cities, town village communities, village communities) according to the migration rate and the construction activity index indicated 7 communities with the highest intensity of the suburbanization process. Our analysis of LQ in all units within GMA (cities, town village community, village communities) and its core cities allowed identification of the communities with the highest SME activity. Additionally, based on statistical data of selected suburban areas, 2 municipalities (Chwaszczyno, Straszyn) with the highest entrepreneur potential were found, which we refer to as the nests of entrepreneurship.

Our study confirms that communes characterized by the highest intensity of the suburbanization processes present higher business activity than other communes. However, this is just preliminary study, which offers incomplete explanation of the suburbanization process in a metropolitan area in Poland and will be further developed, using the CATI method, in additional studies.

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Keywords: suburbanization, Poland, SME sector, transformation, Gdansk Metropolitan Area

I. INTRODUCTION

Over the past 25 years Poland has undergone radical political changes. Transformation of the Polish political and economic systems have restructured the country. In general, it can be said that, since 1989, the undergone reforms have transformed Poland from central planning economy to market economy, which resulted in creation of a democratic society. Poland's transition has been characterised by a rapid growth of the SME sector, which has not only been the driving force behind the sustained growth but also has successfully absorbed much of the unemployment created by the shrinking sectors of the state. Bratlett claims, that SME development in Poland is arguably one of the most successful transitions in Eastern Europe (Bratlett, 2001).

The most critical features of this transition can be framed by the following economic and industrial re-structuring: the shift from industrial economy to service economy, transformations of enterprises, privatization, the shift from supply-oriented to demand-oriented economy, re-orientation of trade onto the EU markets (Couch, Leontidou, Petschel-Held, 2007; Stanilov, Sýkora, 2014).

Simultaneously, post-socialistic transformation into a democratic society and a market economy has begun new
processes in terms of Polish urbanization. The socio-economic changes in Poland were most dynamic in the cities, especially in the suburban areas. Urban areas have experienced significant and continuous growth as well as rapid diversification. The growth has been driven, on the one hand, by rapid development of small and medium enterprises, on the other hand, by both “the American way of life” as well as by the Western European liberalism, which has significantly contributed to a proliferating urban sprawl in Poland.

The economic aspect of the urban sprawl in Poland is visible in the political debate as well as in numerous studies commissioned by local and regional authorities. The results of these studies mostly provide an answer to the question: How the economic activity of SMEs has spread out across the country or the region? Relatively little is known about the process itself and the consequences of spatial restructuring in metropolitan regions within the context of a core city – that is, the suburban area. Current literature provides scarcity in the number of the studies using firmography in city planning, although the discussion on how to develop policies for controlling the urban sprawl in Poland and to support SME development is still on.

The paper begins with a description of the suburbanization process in the SME sector in Poland. This part is followed by examination of the migration rate and the SME location quotient for core cities and the suburbs of the Gdansk Metropolitan Area.

II. THE ORIGINS OF THE SUBURBANIZATION PROCESS IN POLAND

Since the 1990s, cities have experienced dramatic changes and a mass flow of citizens as well as an increased activity in their suburban areas. There is widespread evidence that this new phenomenon of suburbanization has enormously impacted the growth pattern of polish cities (Zuziak, 2005; Lorens, 2005; Liskowski, Grochowski, 2009; Kajdanek 2011; Słodczyk, 2011; Gzell, 2015). Urban sprawl is a basic form of development in modern cities, which recently has also been considered by polish urbanism, with the main concern related to the shift of urban functions from the central areas to the suburbs. Nowadays, this phenomenon is widespread globally. The phenomenon of the urban sprawl also constitutes an essential element of urban research (Fishman, 1989; Oliver, 2001; Gillham, 2002; Bruegmann, 2006; Couch, Leonitidou, Petschel-Held, 2007; Clapson, Hutchison, 2010). Nevertheless, the Polish suburbanization process has its own characteristics and could be viewed with a genesis similar to that in other Eastern European countries (Couch, Leonitidou, Petschel-Held, 2007; Stanilov, Šykora, 2014).

Since the 1990's, a couple of features, which have caused allocation of human construction activities in given areas, could be observed in the post-socialistic countries. The collapse of the communist regime resulted in a shift away from the centrally planned political-economic decisions, which in turn has affected spatial planning of the cities and thus their landscapes. As early as in May 1990, the first democratic elections for polish local governments took place. “Freshly” elected authorities, for the first time, had to handle local urban planning themselves. The authorities, inexperienced in spatial planning, had interpreted the freedom from central supervision as the land owners' freedom to dispose their land in any way they desired. As a result, spatial planning had shifted away from the whole-city and entire-district planning, in favor of fragmentary decisions, as a reaction to negative associations connected with centrally-managed spatial planning during the communist times. Local authorities mostly focused on satisfying the whims of the landowners. As a result, the desire for living in single-family housing - an exclusive and rarity to have during the socialistic times - was satisfied with massively emerging building permits for constructions in the suburban areas (Martyniuk-Pęczek 2005; Grochowski, Lisowski, 2008; Kajdanek 2011). Suburbs have been the best locations for such investments, since in the cities, land is mostly owned by the private sector, while private land management and ownership legally have been a complicated issue. Meanwhile, major problems associated with restitution and privatization of the properties in the cities have emerged. In terms of 'greenfield' development it has become easier to realize investments. Simultaneously, production of multi-family buildings has fallen rapidly (Grochowski, Lisowski, 2009). Competition among local authorities to obtain investors strengthened the trend of cityPeripheral developments.
These factors were the first impulse for suburbanization, which has been growing in Poland for the past two decades. Impact of the urban sprawl in post-socialistic cities is discussed in more detail by other authors (Pilcher-Milanović, Gutry-Korycka, Rink, 2007; Niusiš, Rink, 2007; Liskowski, Mantey, Wilk, 2014). The causes of urban sprawl have been diagnosed in terms of socioeconomic transformations. The search for better quality of life has resulted in a rising consumption and in new lifestyle patterns, combined with increased motorization. These trends have influenced the decisions of locating residential buildings in the suburbs. At the same time, this relocation also has been imposed by the demographic changes involving a population decline as well as vast out-of-city migration occurring ever since 2004. Other impacts of the urban sprawl, such as lack of coordinated planning as well as lack of adequate instruments and rules for spatial planning (Liskowski, Mantey, Wilk, 2014; Stanilov, Sýkora, 2014) have deformed the urban fabric and the overall shape of the post-socialist cities.

More importantly, the transition to capitalism has radically reconstructed the economy, and so, the city environment as well. New retail structures have appeared in the form of hypermarkets and retail centers, which have been increasingly developing in suburban areas and in other municipalities of the capital region. Along with emergence of new business parks and enterprise zones, these developments have diversified the peripherals of the cities.

Generally, had rushed the first mass of unemployment, which later developed into growth of SME capital investments. Lack of space in the inner city has resulted in an increasing allocation of human activities on the outskirts.

Suburbanization, in the context of urban development of the cities, has to be considered as a part of a broader transformation process taking place in contemporary urban planning – a process called metropolisation. Metropolitan regions are fundamental economic units of society (Gillham, 2002; Markowski, Marszal, 2006). In metropolitan areas, where an increased trend of the suburban sprawl can be observed, often a new form of the city – a between-city – emerges. It is a spreaded network, a fuzzy system, strongly connected in terms of its functioning, but devoid of traditional spatial compactness and not fulfilling the traditional canons of spatial order. The urban sprawl paradigm has been identified by Duany, Plater-Zyberk, Speck as composed of five components, such as:

- housing subdivisions or living pods,
- malls and retail centers,
- office and business parks,
- civil institutions, no public space,
- roads.

The suburbanization process in Poland is characterised by different features (Couch, Leonidou, Petchel-Held, 2007). Some of these characteristics could be observed in the Gdansk Metropolitan Region.

It should be noted that, evolution of the residential and retail design in Poland (Zuziak, 2005; Markowski, T. Marszal, 2006; Lisowski, Grochowski, 2009; Beim, 2009; Masik, 2010; Kajdanek, 2011; Liskowski, Mantey, Wilk, 2014), has been widely discussed, however, there is not much research on the SME sector and its contribution to proliferation of the urban sprawl.

It seems that high economic activity, increased during the past 20 years, is the specificity of Polish suburban areas [Martyniuk – Pęczek J., Martyniuk O., 2012]. This is the reason why suburban areas are called entrepreneurship nests.

Traces of the relationship between the level of economic activity of SMEs and the suburbanization processes can be found. Our analysis covers the Gdansk Metropolitan Area.

III. METHODS AND MEASUREMENT

The potential roles of SMEs in transformation involve:

- generating employment and thereby contributing to absorption of labour surpluses, as a result of economic restructuring;
- contribution to development of a diversified economic structure;
- contribution to development of a supply base, in order to serve the needs of large firms;
- contribution to adaptation from highly concentrated structures based on mass-production methods to a more flexible production system;
- being the source of innovation (Smallbone, Welter 2009).

What is more, it makes an impetus for the three key areas supporting economic growth: creation of jobs, innovation, and development of competition (Brezinski and Fritsch, 1996). Additionally, the local nature of SMEs is often emphasized, along with their strong social (the middle class creators, supporting continuation of social-democratic reforms) and economic (using local resources) impact on business location (Bratlett, 201; Sruzycki 2004, Lichniak 2011). Their local orientation is determined by the lack of capital, lack of local knowledge of market opportunities, and often by the need to begin business operation on a part-time basis. Literature and numerous studies on the activities of SMEs in Poland widely document their particular roles, hence this paper will not investigate these issues further [e.g: Lichniak 2011; Wolak-Tuzimek 2010; study PARP 1994 -2014; Starczewska - Krzyżtoszek 2011; research ARP 2008-2010; Piaścik 2011; Grudzewski, Hejduk 1998; Sasin 2003, Dominiak 2005].
In terms of the number of enterprises, Poland ranks sixth in the European Union. The vast majority of those companies - as many as 99.8% - are small and medium-sized enterprises. Polish SMEs primarily operate in the sector of trade and services (76%), less often in construction (13.4%) and the industrial sector (10.6%). As compared to the EU average, the SME sector in Poland had been increasingly dominated by microenterprises, while the share of small firms represents about half of all small enterprises in the EU. In terms this enterprise sector's participation in the GDP, SMEs generate every other zloty (47.3%), while employees of micro, small and medium-sized enterprises (3.9 million of people) are the majority (60.5%) of all employees in the enterprises. Even if the number of SMEs in Poland — in terms of its share of the total number of firms — does not differ significantly from the EU average, the Polish SME sector has comparatively more micro enterprises and fewer small companies. Moreover, although the share of employees in Polish SMEs is slightly higher than the EU average, the generated added value is significantly below the EU average. This suggests somewhat lower productivity, but also concentration of Polish micro enterprises in low the value-added sectors (EU 2013). Most of Polish SMEs are located in: the Mazovia Province 57,57 SME per 1000 inhabitants, the Greater Poland Province 52.95 SME per an inhabitant, the Pomerania Province 50.66 SME per 1000 inhabitants (PARP, 2014). About 6.5% of Polish enterprises (116 000 entities) operate in the Pomeranian province, 99% of which are SMEs.

Our study was divided into two parts: spatial and economic. The aim of the spatial part was to select suburban municipalities with the highest intensity of the suburbanization process within the Gdansk Metropolitan Area (GMA), as measured by the migration rate and the construction activity index. We based our calculations on the database provided by the Polish Central Statistical Office and by the Community Offices of the Pomerania Province in GMA. The project's authors are aware of the weaknesses of the research methods which were selected to assess the process of suburbanization. In terms of the migration rate, the weaknesses involve e.g. lack of obligation to report the change of an address, as well as the possibility to own several flats in Poland. In terms of construction, the activity index weaknesses involve e.g. delays in registering completed buildings resultant from the obligation to pay a high property tax.

GMA constitutes an important part of the functional and spatial structure of the Pomerania Province, and is the most important economic and social centre of the Southern Baltic Sea area. Delimitation of the area was conducted in accordance with the "Zoning Plan for the Pomeranian Province."

GMA is composed of: an agglomeration centre of 3 core cities, the functional area of 6 cities, 1 town - village community, and 5 village communities. Surroundings of the agglomeration constitute 5 cities and 12 village communities.

The aim of the economic part was to rank the suburban areas within GMA, according to their business activity measured by the location quotient (LQ). We expected geographic distribution of SMEs to mirror the distribution of inhabitants; that is, the larger the population, the more entrepreneurs in a given area. The LQ value equals one when an area contains a share of SMEs equal to its share in the total population. The LQ value greater than 1.10 indicates concentration of SMEs higher than expected. The LQ value below 0.90 indicates concentration of SMEs lower than expected (Renski, 2008). Our calculations were based on an adequate database prepared by the Polish Central Statistical Office.

IV. THE FINDINGS

Classification of the units within GMA (cities, town village communities, village communities) according to the migration rate and the construction activity index resulted in finding 7 communities with the highest intensity of the suburbanization process (table 1).

TABLE I. MIGRATION RATES AND CONSTRUCTION ACTIVITY INDEXES WITHIN GMA AND SELECTED SUBURBAN AREAS

<table>
<thead>
<tr>
<th></th>
<th>All units of GMA</th>
<th>Selected suburban areas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Migration rate</td>
<td>CA 1</td>
</tr>
<tr>
<td>Average</td>
<td>7.7</td>
<td>418</td>
</tr>
<tr>
<td>Median</td>
<td>4.28</td>
<td>320</td>
</tr>
<tr>
<td>Min</td>
<td>-22.22</td>
<td>10</td>
</tr>
<tr>
<td>Max</td>
<td>35.06</td>
<td>1480</td>
</tr>
</tbody>
</table>

CA 1 construction activity index 1 - the number of residential buildings (2008 – 2012)  
CA 2 construction activity index 2 – the number of residential buildings (2008 – 2012)
In general, it can be stated that the cities and their suburbs create an enigmatic structure. This pattern of human spatial activity, that is, the pattern of dispersed development, bears entrepreneurial potential. Banski proved that the highest density of enterprises in Poland can be found in the communes directly neighboring a city, while the size of a zone with a higher number of enterprises depends on the size of the city (Banski, 2005). Our analysis of LQ in all units within GMA (cities, town village community, village communities) and its core cities let us identify the communities with the highest SME activity (table 2). Additionally, based on statistical data of selected suburban areas, we find 2 municipalities (Chwaszczyno, Straszyn) with the highest entrepreneur potential. We call them the nests of entrepreneurship.

Our study confirms that communes with the highest intensity of the suburbanization processes are characterized by higher business activity than other communes. However, our statement that suburban areas are characterized by higher concentration of MSPs than central cities can be confirmed only partially, since it is true only for some municipalities, not for entire communes.

Various empirical studies have very clearly shown that there is no such thing as location behavior of the SMEs (van Noort, Reijmer, 2008). Selection of location on the part of a given enterprise depends on a combination of various factors. The aim of this part of the article is to investigate the spatial aspects involved in creating the nests of SME activities.

The analytical technique employed in this study includes the use of a basic urban analysis. Due to an exceptional subject of the research, only few basic determinants which could influence location of the SMEs in suburbs were selected. The most critical features of urban determinants can be framed by following:

- Land usage pattern, which has been underlined as the driving force behind the suburbanization process in Poland, including residential areas, large scale retail, business parks. It is also vital to notice the different scale of investments and its importance on in a metropolitan context. Besides occurrence of typical suburban features, it is important to take into account other forms of the urban tissue. Local services and shops constitute an essential element of entrepreneurship. In the three presented cities, besides the residential and service-providing forms of the urban tissues, micro and small–sized industries are located in the suburban areas. Such types of buildings have not been considered in any previous studies as significant factors influencing formation of the urban sprawl phenomenon.

### Table II. The Location Quotation in the GMA

<table>
<thead>
<tr>
<th></th>
<th>All units within GMA</th>
<th>Core cities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All units of GMA excluding the core cities</td>
<td>Sopot</td>
</tr>
<tr>
<td>Average</td>
<td>0.7854</td>
<td>0.8518</td>
</tr>
<tr>
<td>Median</td>
<td>0.7768</td>
<td>0.7991</td>
</tr>
<tr>
<td>Min</td>
<td>0.4832</td>
<td>0.6345</td>
</tr>
<tr>
<td>Max</td>
<td>1.5925</td>
<td>0.9993</td>
</tr>
</tbody>
</table>

Source: Polish Central Statistical Office and authors’ own calculations

Lodging rentals constituting seasonal seaside business activity were excluded from the total SME number

Source: Polish Central Statistical Office and authors’ own calculations
The transportation system, which is crucial for functioning of the area. The condition of the roads and their significance for the regional transport system and its throughput. It also plays a significant role in access to services. Neighboring an important public transportation hub is crucial, especially for specific branches of the SME sector. Analysis of the public transportation system is connected with the inconvenience of the city commute. Too long commute-time to the city using public transportation as well too low frequency of public transportation connections from the suburbs to the core city can be considered the stimulants of entrepreneurship development in suburban areas.

- Land usage restrictions, which mainly pertain to environmental zones or other protected zones and have a negative impact on the choice of business locations. Any restrictions minimize attractiveness of real estate in such area.

- Institutional values could be transformed into business schemes, such as: tourist attractions or other important national and regional institutions located in the neighborhood. Closeness to municipal local administration can also be an advantage.

- Quality-of-life values, which can be translated as exceptional landscape values. Proximity of any environmental landmark is a unique stimulant of development.

- Strategic regional planning for the future - Discussing the development of the metropolitan region, nowadays, has much in common with new strategic infrastructure developments, such as: regional investments in new roads, investments in public transportation or in other infrastructure. Soon those investments will imprint suburban development.

- Patterns of urban development, which affect urban structure and its clarity in terms of space usage. More extensive structures generate costs in combination with poor quality of adapting the space.

Table 3 presents the determinants of urban characteristics for two municipalities with the highest LQ (Chwarszczyzno, Straszyn).

### TABLE III. URBAN CHARACTERISTICS FOR MUNICIPALITIES WITH THE HIGHEST LQ

<table>
<thead>
<tr>
<th>Determinants</th>
<th>Chwarszczyzno</th>
<th>Straszyn</th>
</tr>
</thead>
<tbody>
<tr>
<td>land usage pattern</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td>Mostly single family housing</td>
<td>Mixed forms of housing</td>
</tr>
<tr>
<td>Large scale retail</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Business park</td>
<td>-</td>
<td>Logistic centers</td>
</tr>
<tr>
<td>Local services</td>
<td>Local shops, barber, post office, bars, restaurants</td>
<td>Local shops, barber, post office, bars, restaurant</td>
</tr>
<tr>
<td>Small-scale industry</td>
<td>Various range of small</td>
<td>Various range of</td>
</tr>
<tr>
<td>transportation system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National highway</td>
<td>-</td>
<td>At the GMA bypass</td>
</tr>
<tr>
<td>Regional way</td>
<td>Direction Kaszuby Region – regional recreation area</td>
<td>Direction Kaszuby Region – regional recreation area</td>
</tr>
<tr>
<td>Local road</td>
<td>Poor local road system</td>
<td>Poor local roads system</td>
</tr>
<tr>
<td>Regional traffic junction</td>
<td>Existing Regional traffic junction</td>
<td>Existing Regional traffic junction with the national highway</td>
</tr>
<tr>
<td>Public transport hub</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Public transport / minutes to gets to the city</td>
<td>More than 30 min. minutes to gets to the city by public transport</td>
<td>More than 40 min. minutes to gets to the city by public transport</td>
</tr>
<tr>
<td>urban-development patterns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>compact structure</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>extensive the structure</td>
<td>Type of extensive urban structure</td>
<td>Type of extensive urban structure</td>
</tr>
<tr>
<td>land usage restrictions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>environmental protection zones</td>
<td>-</td>
<td>The Straszyn Lake reservoir</td>
</tr>
<tr>
<td>other restrictions</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>institutional values</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education elementary / secondary</td>
<td>Elementary school</td>
<td>Elementary school</td>
</tr>
<tr>
<td>Culture</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Administration local</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>strategic regional planning for the future</td>
<td></td>
<td></td>
</tr>
<tr>
<td>new roads</td>
<td>At the new Metropolitan Bypass</td>
<td>At the new Metropolitan Bypass</td>
</tr>
<tr>
<td>public transportation</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other infrastructure</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>tourist attractions</td>
<td>-</td>
<td>old electricity power station</td>
</tr>
<tr>
<td>landscape value</td>
<td>Lake side</td>
<td>Lake side</td>
</tr>
<tr>
<td>public space</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: authors’ own calculations

Straszyn has the largest number of positive stimulants of spatial development. The most important features are: close connection to a national highway, a diverse land usage pattern, relatively good commute to the city. This city is located on a strategic prospective transport node including a newly-constructed Metropolitan ring road. What is more, Straszyn possesses other values, such as tourist attractions and outstanding landscape by the sea.

### V. THE CONCLUSIONS AND PROPOSALS FOR FUTURE RESEARCH

The above overview of various urban determinants is, by no means, a complete one. Never the less, we would like to point out the phenomenon of the suburbanization process in Poland, which has been progressing parallelly to the SME development. This is just a preliminary study, which offers incomplete explanation of the suburbanization process in a metropolitan area in Poland. Furthermore, using the CATI method and a more detailed spatial analysis, we will attempt
identification of the determinants of SMEs allocation in the suburban areas of GMA, in order to confirm or to discredit
van Noort and Reijmjer thesis that the choice for an SME location does not exists. Further research will be conducted in
the economic part of this study. It is probable that the results may become favorable for the suburb areas, if the number of
unregistered SMEs operating in the area is included in the calculations. Such calculation is impossible using the statistical
data. The Polish statistics (BDL) take into account the addresses of the companies' registration. Therefore, in order to
obtain the number of the enterprises operating in selected suburban areas, the authors will make spatial analysis and carry
out a survey using the CATI method in additional studies. If the corrected LQ for suburban areas rises significantly, it will
mean that these suburban areas are characterized by higher actual concentration of SMEs, in comparison with current
statistics. Such results can inspire the local authorities to undertake initiatives aiming to encourage the SMEs operating
locally to register in suburban communes, and thus to contribute to local development.

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