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Factors Influencing the Choice of New Location for Paper Packaging Manufacturers Serving Direct Food Contact Markets in the Modern Era

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Abstract:

Purpose: *The paper investigates the process and criteria used in production location decisions, based on a literature overview and a case study in a location in Poland of an American manufacturing company producing paper packaging for direct food contact with a global production network.*
Design/Methodology/Approach: *The data collection comprised interviews with top management and project management as well as a document analysis.*
Findings: *Obtained result and the findings indicate that the production location decision can be used for larger or smaller enterprises, as well as for other industries, because the article takes into account a large number and a wide range of factors.*
Practical Implications: *Location from the point of view of operations but also full supply chain of raw materials and production requited components that in case of a broken supply chain drastically affects operations.*
Originality/Value: *Modern world in the recent three to five years challenged business due to many global aspects. Unpredicted pandemia of Covid, Suez Canal blocked by a container ship, war in Europe or recent unstable situation on the Red sea forced global companies to rethink and reshape the approach to globalization, especially in perspective of location of the business.*

Keywords: *Company relocation, firm expansion, manufacturing industry, optimal firm size, supply chain management.*

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1. Introduction

Relocation of companies is one of the topics of interest around the world due to the spread of this phenomenon. By involving large resources, relocating a company appears to be a complex decision-making process based on many economic, social, political and environmental factors.

Relocation can be described as a strategy of moving to a new location inside an agglomeration, region of a country, or outside a country. This activity involves high risk due to various aspects that are worth taking into account, including: costs, resources, labor, market regulations, natural environment, research and development potential, fiscal incentives granted by the authorities, infrastructure and others.

The large number of variables and their dynamic and heterogeneous nature make relocation a difficult decision-making act. One way to increase your company's efficiency is to use a relocation strategy. In order to remain competitive, companies organize their production globally. In this way, the value chain is divided into smaller elements that are the subject of the activities of a large number of suppliers located in different parts of the globe, which is a key feature of European business.

Assessing a possible relocation of production is an option to maintain the company's competitiveness. Placing an enterprise outside or inside borders is a strategic decision. In the case of a change in production or global distribution, there are two concepts in the literature:

- "offshoring" - an expression that involves the transfer of enterprises outside the country,
- "backshoring" - a term that means the return of a company to its country of origin.

These terms mean a shift of domestic production to producers abroad or vice versa:

- Domestic Sourcing (Outsourcing) means that production takes place outside the company or group of unaffiliated companies, but in the country of origin,
- International Sourcing (Outsourcing) means that production takes place outside the enterprise or its group and outside the country of origin by unrelated companies,

2. Literature Review

2.1 Factors Determining the Relocation of Enterprises

Business relocation is not a new phenomenon, and globalization has led to an intensification of this phenomenon on all continents in recent decades. Relocating a

company is not an isolated issue, affecting one continent or geographic region. It is also not a temporary problem, where the event intensifies over a short period of time. There are no specific types of business or industry that need to be relocated. There is a variety of activities from production to trade and services.

The literature contains descriptions of the relocation of Western European enterprises to the eastern countries of the continent. For example, Conroy traced the scope and characteristics of the transfer of commercial services to Central and Eastern European (CEE) countries from 2000 to 2013, using data provided by Eurostat (Conroy, Deller, and Tsvetkova, 2016).

The article confirms that these countries have been a relocation area for various companies since the 2000s. Although this phenomenon is intensifying in Western Europe, there are few studies developing this topic, an example is Kapitsinis's 2019 comparative analysis. The author analysed the movements of Greek small and medium-sized enterprises (SMEs) from Greece to Bulgaria before the crisis (Kapitsinis, 2019). His research looked at size, sector and incentives as factors in relocation and the effects of relocation on business performance.

The reasons that lead to the relocation of enterprises are diverse. Much of the research shows the importance of location for choosing where to relocate a company (Ferdows, 1997). Other authors, such as Eslamipoor and Sepehriar, have the opposite opinion, believing that environmental problems lead to the relocation of companies (Eslamipoor and Sepehriar, 2014). This statement is confirmed by subsequent studies, such as research initiated by Linnenluecke, who stated that climate change will lead to significant disruptions in the activities of enterprises, as a result of which they will be forced to change the location of their operations.

According to the authors, such a need would be determined by the impact of climate change, including: droughts, floods, sea level rise, on companies and disruptions to suppliers or buyers (Linnenluecke, Stathakis, and Griffiths, 2019).

However, Baldwin and Okubo proved that when companies are allowed to change their location, new productivity effects appear (Baldwin and Okubo, 2014). The reasons for relocation, according to Chan's research, are divided into four categories:

- reduction of costs or operational efficiency,
- reduction of production capacity,
- finances, consolidation and change of management,
- labor disputes and facilities (Chan, Gau, and Wang, 1995).

Portnov and Schwartz showed that the choice of location depends on the regional or national context (Portnov and Schwartz, 2008). For example, cold and rainy areas are less attractive compared to countries or regions that offer better alternatives for investors. In the authors' opinion, location advantage is a relative concept, which

proves that the regional and national level is more important than the international one. The model was empirically tested using data on population growth in urban settlements located in 40 European countries.

However, Risselada showed that factors related to real estate (their age and size) are not taken into account in research on enterprise relocation decisions (Risselada, Schutjens, and Van Oort, 2013). The model proposed by the authors assesses the role of facility determinants and proposes a distinction between companies located in residential and commercial real estate.

In turn, Johansson and Olhager took several factors into account, which they then grouped into three categories (main localization strategies): access to development skills, proximity to the market and access to cheap production (Johansson and Olhager, 2018).

Arauzo-Carod identified a large number of factors, divided into neoclassical and institutional, and emphasized increasing the quality of data in the relocation decision (Arauzo-Carod, Liviano-Solis, and Manjón-Antolín, 2010). Bodenmann and Axhausen, on the other hand, proposed several variables: production factors, economic environment and the importance of urban interventions.

Additionally, the authors took into account the impact of other secondary variables, such as local taxes, government-business compliance, and accessibility (Bodenmann and Axhausen, 2012). Based on a sample of companies that moved to Belgium, Sleuwaegen and Pennings found that the market potential of host regions and wages are factors determining the choice of location (Sleuwaegen and Pennings, 2006). Taking into account firm characteristics, the authors showed that large firms have a greater tendency to relocate to remote areas.

Vereecke and Van Dierdonck examined location factors using the Ferdow model, which they divided into stable (proximity to the market), less stable (work and skills) and extremely unstable (socio-political factors) (Vereecke, Van Dierdonck, and De Meyer, 2002). According to the authors, tax cuts or financial incentives granted at the time of purchase are temporary, they only influence the initial decision and do not provide lasting benefits.

Confirmation of such results also appears in Jensen's work that has as a central element the impact of financial incentives on business expansion and relocation (Jensen, 2017). The article examines the ability of such financial incentives to determine employment. The results show that incentive programs have no visible impact on the expansion of companies in the context of job creation. Albertoni conducted an analysis whose results showed that some factors (labor cost, market entry) are statistically significant, while others have little impact on the relocation decision (availability of qualified people, outsourcing) (Albertoni, Elia, Massini, and Piscitello, 2017).

According to the principle of location coherence, "the actual activity should take place on right place" (Budner, 2004). This means that each activity is assigned there is a specific place where it can be implemented. Not all places will accommodate you sufficiently favorable development conditions for the type of activity.

On the other hand, no all types of activities can be carried out in a given place. Every place a specific type of activity is therefore assigned (Zawadzki, 1973; Leśniak, 1985). The localization coherence rule is created by two sides of the implementation. Active page related is with the search for optimal location points, and passive - with the determination the most favorable land use (Leśniak, 1985; Budner, 2004).

Weterings and Knoben analyzed the factors causing companies to relocate over short and long distances. The study showed that short-distance relocations are determined by the growth of companies and indirectly by the need for more space. In contrast, longer-distance relocations are largely determined by regional characteristics. The concentration of similar or related companies in a limited space, higher levels of urbanization, and the intensity of research and development activities prevent organizations from leaving the region (Weterings and Knoben, 2013).

According to analyzes conducted by Sunjka, the main reasons for relocation are: cutting costs, focusing on core activities and access to new markets (Sunjka and Papadopoulos, 2022). Another study by Rupasingha and Marré showed that rural environments attracted some business from urban areas (Rupasingha and Marré, 2020).

The authors showed that important factors such as population density and proximity to urban locations have a positive statistical significance, while regional specialization and market potential have the opposite or no effect on the relocation of enterprises from cities to rural areas. Another conclusion of these authors is that when relocating individuals, locations close to their places of origin are preferred.

3. Description of the Applied Research Methods and Tools

3.1 Characteristics of the Enterprise under Examination

The manufacturing company that is the subject of the case study is a manufacturer of cardboard packaging for food contact application. The factory in Poland was started in 2010, but the history of the company dates back, to 1983 when the owner and the founder of the company started selling catering boxes in New York, USA.

The company started its sales activities in Europe in 1997 and first production operations in Belgium in 2000. The branch in Lodz was established in 2010 and initially the machine park included a die-cutting machine and two folding-gluing machines, while the sheets were ordered from an external supplier. Then, in 2013, a cardboard production line was launched and the transition to Earthsleeve technology

was made. The manufacturer is the only supplier of cardboard sleeves used for thermal insulation of cups with hot drinks served by Starbucks and other coffee chains.

The history of Polish location includes the change in the ownership structure. The new owner's long-term strategy is to switch to sustainable raw materials to the level of 85% by the end of 2025. One of the steps was to expand production by purchasing a group of companies specializing in paper packaging solutions. The merger of both organizations was possible thanks to a similar organizational culture, a long history of innovative products, commitment to sustainable development and many years of customer relationships.

The worldwide product portfolio includes individual and catering bowls, serving platters, takeaway containers, and two-colored tilting containers. Additionally, the product portfolio includes dishes, cutlery and bread containers. The paper products manufactured by the plant located in Lodz include beverage solutions, catering solutions, takeaway solutions and delivery solutions.

Thanks to the synergy effect after the merge and acquisition company may use wider manufacturing techniques. These include manufacturing capabilities such as paper pulping, embossing, thermoforming, recycling, mixing, tooling, injection molding, hot stamping, metalizing, crimping, die-cutting, gravure and flexo printing, forming, windowing, and folding and gluing.

Material options include APET, CPET, PET, polypropylene, polystyrene, PLA, cellulose, cardboard and corrugated cardboard. Due to the further development of the company, a decision was made to make another investment in Europe, expanding the current production capabilities with new machines for the production of paper cutlery.

Three geographical locations were considered, i.e., Belgium, Great Britain and Poland. The largest recipient of the new range of products will be a global fast food company, which is a world leader in this sector.

3.2 Criteria for Selecting a new Location for the Company

The current area of the company's Łódź branch is 4,700 m2 and is not large enough to install new machines, so the company is planning expansion. The total area required is approximately 9,000 m2. The surveyed company is looking for opportunities to expand its operations in its current logistics park or outside its current location.

As part of the study, individual criteria for selecting a new location for the company were selected and assessed using a five-point Likert scale, where the lowest value

("1") meant an unimportant factor, and the highest ("5") meant a very important factor.

When selecting determinants, various grouping methods used by researchers were used. For example, Arauzo-Carod created two categories of factors (classical and institutional) (Arauzo-Carod, Liviano-Solis, and Manjón-Antolín, 2010). However, Vereecke and Van Dierdonck divided factors into three categories (stable, less stable and extremely unstable) (Vereecke, Van Dierdonck, and De Meyer, 2002). Authors using statistical methods distinguished factors into significant and unimportant ones (Albertoni, Elia, Massini, and Piscitello, 2017).

In turn, Ellram researched the factors that influence an organization's decisions about the location of production and identified 8 factors and 29 subfactors with which he statistically determined the attractiveness of various regions of the world as locations for production units (Ellram, Tate, and Petersen, 14-22).

The main criteria for selecting a location for the company, identified on the basis of the analysis of professional literature, are summarized in Table 1.

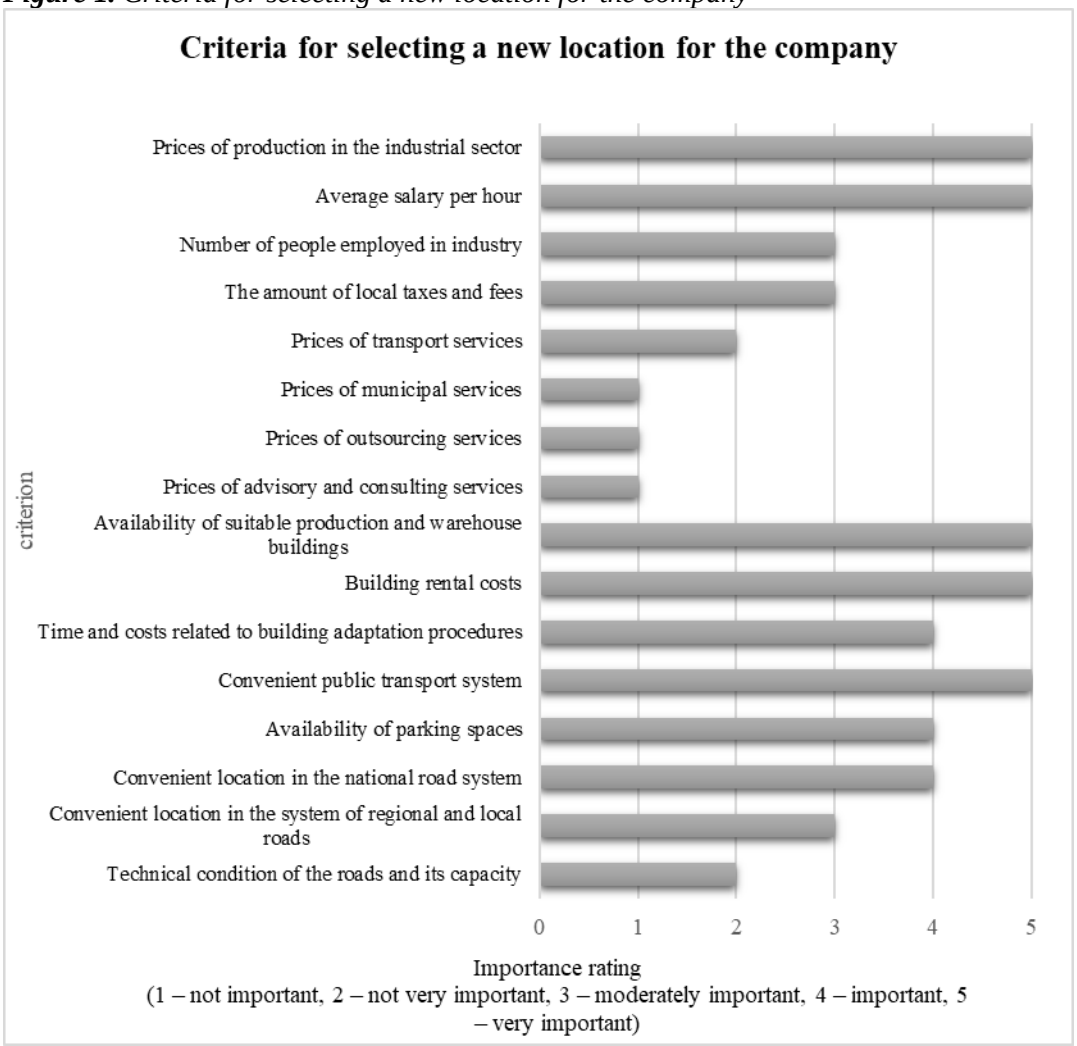
Table 1. *Criteria for selecting a new location for the company*

Main criteria	Detailed criteria
Access to cheap markets	Prices of production in the industrial sector
Human Resources	Average salary per hour Number of people employed in industry
Costs of running a business	The amount of local taxes and fees Prices of transport services Prices of municipal services Prices of outsourcing services Prices of advisory and consulting services
Real estate	Availability of suitable production and warehouse buildings Building rental costs Time and costs related to building adaptation procedures
Infrastructure	Convenient public transport system Availability of parking spaces Convenient location in the national road system Convenient location in the system of regional and local roads Technical condition of the surface and road capacity

Source: *Own elaboration.*

The detailed criteria presented in Table 1 were assessed using a Likert scale and the results are presented in Figure 1.

Figure 1. *Criteria for selecting a new location for the company*



Source: *Own elaboration.*

4. Research Results and Discussion

The conducted research has shown that from the enterprise's point of view, the most important criteria when choosing a new location are production prices in the industrial sector, average remuneration per hour of work, availability of appropriate production and warehouse buildings, building rental costs and a convenient public transport system.

However, the prices of municipal services, the prices of outsourcing services and the prices of advisory and consulting services turned out to be unimportant factors.

5. Conclusions, Proposals, Recommendations

As part of this study, several factors determining the choice of location for the relocation of industrial activities were selected based on the literature. The criteria are grouped into five main categories, for which several indicators have been distinguished.

A case study was presented covering the selection of a location for a production company in the industry of food contact paper packaging. The result shows the capacity and effectiveness of the model, which can help decision makers make better choices. A large number of considered criteria and indicators allows for the correct selection of locations.

Future research will include several specific indicators for each determinant. Another direction could be to determine the most appropriate indicator, while reducing the number of factors, if the data are subjected to statistical treatment. In this way, the results will better shape company expectations and reduce the risk of future relocation.

The proper location of an enterprise is one of the most important sources of competitive advantage and determines both access to production factors, sales markets and more favourable fiscal solutions. Despite the rapid changes in the environment resulting from globalization or IT and technological progress, the classic location factors still remain important.

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