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Does Georgian Ceramic Industry Have Competitive Advantage on Local and International Market Arena? Case Study of Italian Wall and Floor Tile Industry

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Abstract

This study aims to identify factors which give sustainable competitive advantage to the Georgian ceramic industry with the capability of import substitution and further export promotion potential in the region. Research deploys Porter's Dimond model to identify industry's nationwide competitive lead for stable development and supply chain horizontal and vertical integration.

Keywords: export, Georgian ceramic industry, import, tourism industry, wall and floor tiles

JEL: F10, L10, L61

Introduction

Every State's prosperity is formed gradually, not inherited by the fortune of the history. Country's success does not evolve out of a nation's natural endowments, its labor pool and interest rates, or its national currency's worth, as it is stated in the theory of classical economics.

It is crucial to underline, that country's competitiveness and sustainability is subject to the capacity of its industry to innovate and upgrade. Local state owned and private enterprises gain advantage against the world's top competitors due to the commercial pressure and challenge. Market players benefit from having strong domestic rivals, aggressive internal suppliers and supportive industries, challenging local customers with strong demand conditions.

The Georgian ceramic industry is presented as a source of sustainable competitive advantage to substitute imports and stimulate nationwide supply chain backward and forward integration processes. Local ceramic industry's competitive advantage is developed and sustained through a highly integrated localized process. Diversity in national values, culture, trade balance structures, state institutions, and histories all contribute to final competitive success. It is worth to underline that there are variety of patterns that shape competitiveness in every country; no nation can or will have power and capability of competition in every single industry.

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Research Methodology

The methodology for conducting the specific industry's sustainable competitive advantage analysis is founded on the multi-level system, which deploys quantitative and qualitative data search and transformation of it into the valuable information. The following figures reveal key steps and points out different aspects and approach used on various levels like global and countrywide as well as the involvement of the related international industry examples.

To start with, the research interest area was narrowed down with the actual problem generated through the Georgian ceramic industry framework analysis and concerning its structural composition, as well as the effect of Porter's diamond on the industry's competitive advantage on the global and regional arena. Hereafter, the research problem is to understand the effect of the industry's composition on international rivalry forces and analyze individual variables which build up Porter's diamond and competitive advantage. Accordingly, the research question was narrowed down as follows: Does Georgian ceramic industry has competitive advantage on the international playground, and can it substitute growing imports?

Kivunja (2017) states that for the purpose of observation thematic, question design to make an observation, for the reason of question structuring and result interpretation the scientific paradigm of the research should be represented.

Thus, research observes the industry structure and the competitive advantage sources of Georgia-based ceramic industry. Questions are asked through the Porter's diamond model, Porter (2020) developed research method that is referred to as Theory of National Advantage, it is designed to help understand the competitive advantage that nations or groups possess due to certain factors available to them, and to explain how governments can act as catalysts to improve a country's position in a globally competitive economic environment with following criteria: firms strategy and structure, factor endowments, related and supportive industries, demand conditions, government support . Questions are structured as open-ended ones to collect flexible answers to them. Finally, interpretation of results obtained after research should be considered as objective rather than subjective with a certain level of error, due to taking sample not whole population – due to the fact that the whole population was not used when taking the sample.

The epistemology of the research is designed (Smith *et al*, 2012) at the third stage when representing the problem, research area, topic and scientific paradigm. The epistemological position of the given research can be formulated as follows: data are contained within the practical knowledge of industry players, suppliers and ceramic industry specialists involved in day-to-day operation of Georgian tile operation and trading sectors; because of information endowment in those three parts of the public, it should be collected through personal and focus group interviews.

To sum up, research integrated desk analysis and observation tools within the quantitative data collection process (Saunders, 1997).

Literature Review

Structural Composition of Georgian Economy

According to Geostats (2020) Georgia's economic growth is driven by services and goods; however, exports base is exceptionally low. From the analysis of the Growth Domestic product in year 2019, it is vivid that services contribute 78.4 percent of total GDP, while Industry generates only 14.4 percent and respectively agriculture is the lowest with 7.2 percent in GDP share. At the same time, according to Chatham House (2020) total exports excluding re-exports is only 12.4 percent of GDP, while import for local consumption peeked to 45.6 percent of GDP that stipulates negative trade balance of the country. Imports are valued only for local consumption (re-exported categories are reduced by copper concentrate, cars, pharmaceuticals, and tobacco); Exports also exclude these re-export products to present accurate picture. Given figures are presented in chart 1 bellow:

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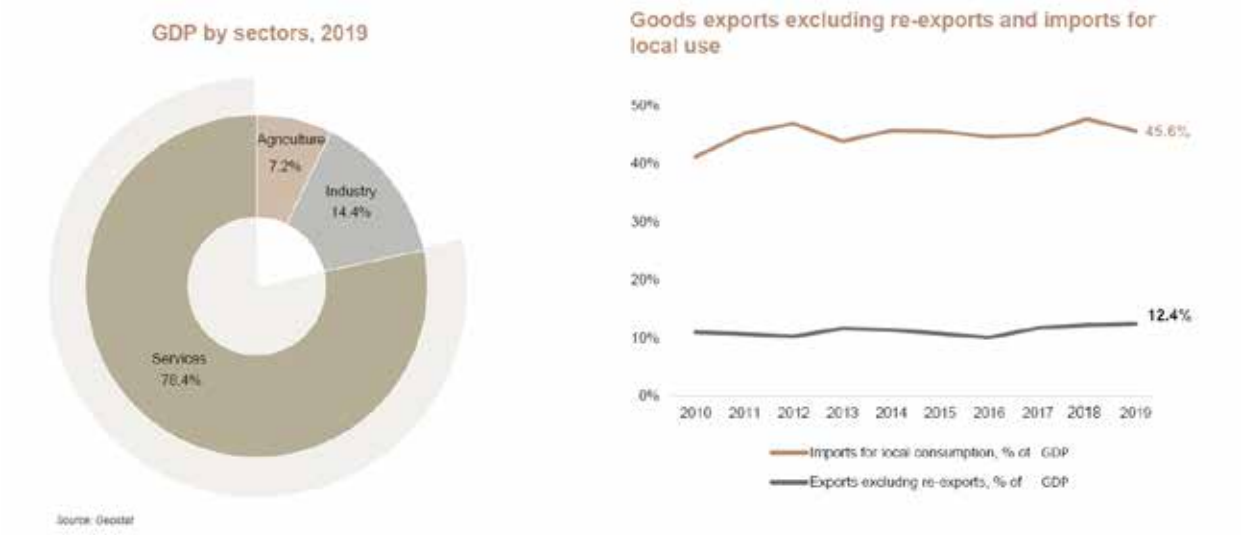

Chart 1. GDP by Sectors and Goods Export

Tourist Industry Structure and Revenue Formation

National Tourist agency (2020) underlines that in year 2019 total revenue from tourism industry contributed 3.3 billion USD. Structurally given amount is split between shopping and entertainment 1.3 billion USD, food and beverages 0.9 billion USD, accommodation 0.8 billion USD, transportation 0.3 billion USD. Simultaneously, research evaluated that 60 percent of total tourism revenues is spent on import to generate the value offering for customer. More specifically out of 3.3 billion USD, 2 billion is spent on imports while 1.3 billion USD is retained back in the Georgian national economy. Visualization of the information is presented in chart 2 bellow.

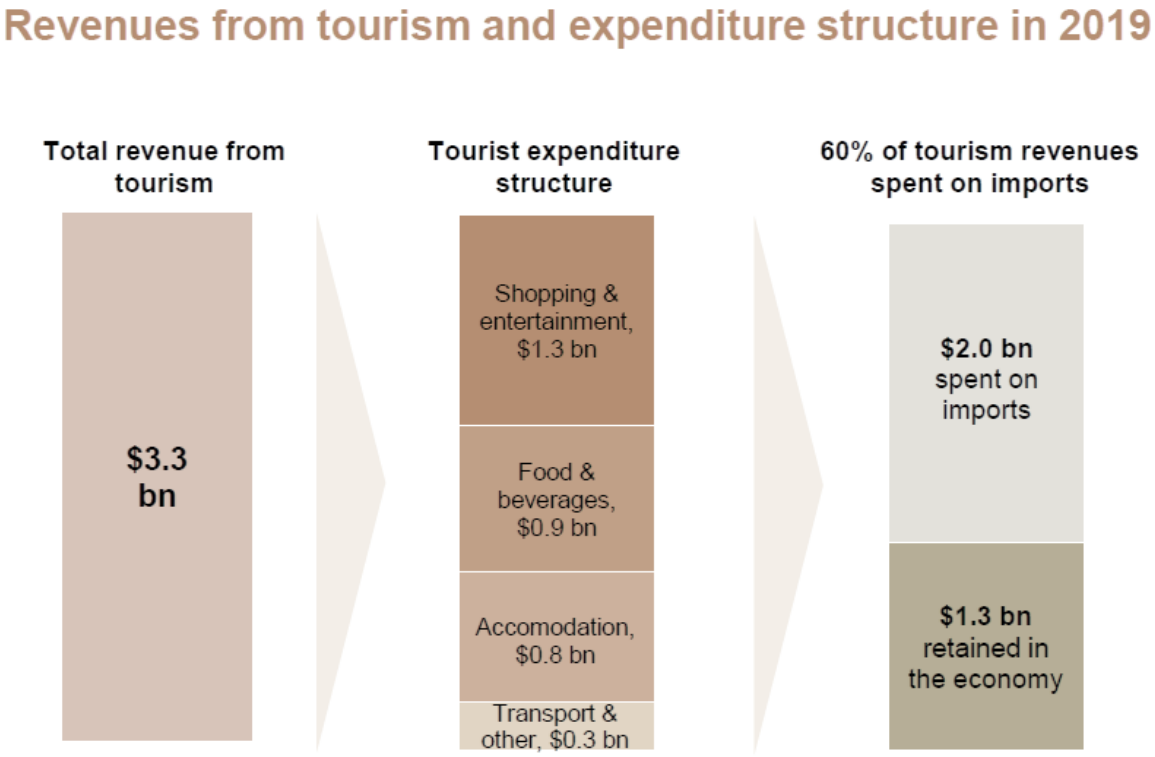

Chart 2. Revenues from Tourism and Expenditure Structure in 2019

Source: Galt and Taggart

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To sum up, research estimates that out of one dollar spent by visitor 40-45 cents is spent on imported goods (it is primary effect). Concurrently the National Bank of Georgia (2020) estimated 35-40-dollar cents.

Additionally, based on the links between tourism-related sectors (construction, trade, real estate) and their demand for imports , the one dollar spent by tourist generates an additional demand of 18-20 dollar cents on imported goods and services (it is secondary effect). Considering these two effects, on average 60 cents is spent on imports from one dollar spent by a tourist visiting Georgia.

Potential Production Development Areas

To achieve new growth potential through import substitution strategy Galt and Taggart (2020) identifies industries that have production capacity and capability of foreign direct investment attraction such as construction and industrial materials; Chemicals and related products; food products; furniture and clothing. Research analyzes main import volumes by industries to identify valid and enough internal demand condition for specific industry inert production development potential. Import structural analysis for year 2019 is presented in chart 3 bellow.

Chart 3. Import Structural Analysis for year 2019

Accordingly, our research is focused on Constructions and industrial materials sector and more specifically ceramic industry competitive advantage is analyzed to identify sources of sustainable development and growth if any.

Construction and Industrial Materials Industry

According to TBC invest (2020) next five years, in the pipeline of construction and industrial materials direction Georgia has private and public projects with total worth of 25 billion USD. Out of which residential real estate contributes 10 billion USD, government infrastructural projects achieve 5 billion USD and hotel sector generates 1.7 billion USD.

According to Galt and Taggart (2020) last ten years Georgia faces ongoing trade deficit in construction and industrial materials. Also, in the last year of the import structure of whole industry, ceramic products generated 79 million USD imports. Detailed industry analysis is presented in chart 4 bellow.

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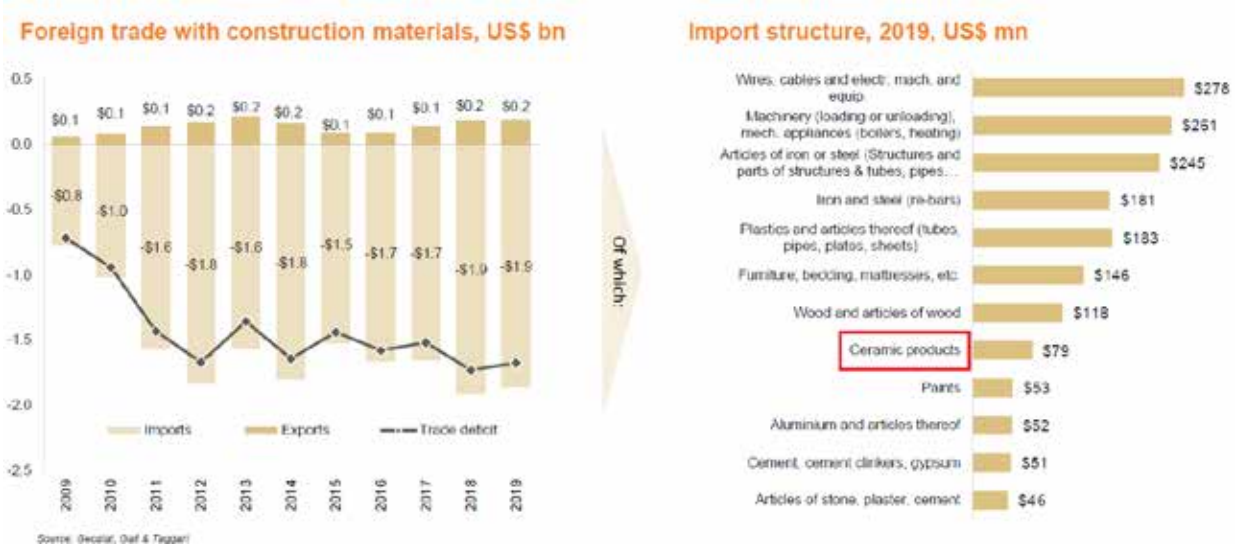

Chart 4. Industry Analysis

Italian Ceramic Industry from the Perspective of Porter's Diamond

Home country's demand plays an essential role for specific industry development. It enables better understanding of the customer needs and desires. It shapes the attributes of domestic ally made products and creates pressure for innovation and quality standards.

Tile Edizioni (2019) underlines that Italian ceramic industry after the world war two and Marshal's plan of reconstruction had post war housing boom, customers wanted the cool floor because of hot climate conditions.

Factor endowment is presented through basic factors like natural resources, climate, location, demographics and advanced factors as communication infrastructure, skilled workforce, research facilities. It is crucial to underline that basic factors can provide only an initial advantage, while they must be supported by the advanced factors to maintain success.

According to MIC (2020) In case of Italian market there was a choice of tile to meet customer demand and choice of Italy as production location. At the same time, wood is less available and expensive then tile locally. Also, most of advanced factors either were created or were available within country.

Benefits of investment in advanced factors by suppliers and related industries and spill overtook place in Italy. It creates cluster of supporting industries, thereby achieving a strong competitive position internationally. In Italy for that period the enamel production unit was available, the glaze production was also favorable. These two were the main components of producing tiles and given condition reduced the transportation costs.

Log term corporate vision and whole strategy is a determinant of industry success. Ability of the players to develop and sustain a competitive advantage through strategic framework is another attribute of industry development. Presence of domestic rivalry shapes and improves a company's competitiveness.

In Italy there was an availability of low entry barriers to market in the tile industry. The rivalry become very intense and there was a breakthrough in the both product and process technologies.

Chance events as major innovations can reshape industry structure, government with its policies can detract from or improve national advantage. Also, regulations can alter home demand conditions. Government investment in education can change factor endowments.

Ceramic Industry Structure

According to Fuchs (2005) the phrase 'ceramics' or ceramic products is used for inorganic materials with possibly some organic content, made up of non-metallic compounds and made permanent by a firing process. In addition to clay-based

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materials, today ceramics include a multitude of products with a small fraction of clay or none. Ceramics can be glazed or unglazed, porous, or vitrified. Firing of ceramic bodies induces time-temperature transformation of the constituent minerals, usually into a mixture of new minerals and glassy phases. Characteristic properties of ceramic products include high strength, wear resistance, long service life, chemical inertness and nontoxicity, resistance to heat and fire, (usually) electrical resistance and sometimes also a specific porosity.

Euro Commission (2007) states that Clay raw materials are extensively distributed all over Europe including Georgia, so ceramic products like bricks which are relatively inexpensive but which incur high transport costs due to their weight are manufactured in virtually all Member States. Building traditions and heritage considerations result in different unit sizes from country to country. More specialized products which command higher prices tend to be mainly produced in a few countries, which have the necessary special raw materials and – equally important – traditions of skill and expertise. Research is concerned with one part of the ceramic industry known as wall and floor tiles industry.

Wall and Floor Tiles in Details

According to British standards (2006) ceramic tiles are thin slabs made from clays and/or other inorganic materials, commonly applied as coverings for floors and walls. Ceramic tiles are usually shaped by extrusion or dust pressing at room temperature, then dried and subsequently fired at temperatures sufficient to develop the required properties.

The ordinary tile shapes are squares and rectangles, but other polygonal shapes (hexagons, octagons, etc.) are likewise available. As for size, tile sides range from only a few centimeters (mosaics) to slabs with 60 – 100 cm sides. Thickness ranges from around 5 mm for wall tiles to over 25 mm for some extruded tiles (British standards, 2006). Product visualization is presented in picture 1 bellow.

Picture 1. Product Visualization

Ceramic wall and floor tiles are vital wall and floor covering products used in the building and housing industry, accordingly the maintenance and renovation market is of special importance to given products. Other multifunctional applications are, the use of tiles for external facades, swimming pools and public areas.

According to Navarro (1998) The wall and floor tile manufacturing process consists of a following stages: storage of raw materials, body preparation (dust pressing powder (dry or wet process) or extrusion paste), shaping, drying of the green body, glaze preparation and glazing, firing (with or without glazing), polishing, sorting and packaging.

Shreve (1945) states that Clays and kaolin are common plastic raw materials used in the manufacturing of wall and floor tiles. Chamotte, quartz, feldspars, calcium carbonate (calcite), dolomite and talc are non-plastic raw materials with different functions in the body composition for instance feldspars act as fluxing agents, while calcite enables the formation of crystalline phases. The same raw materials combined with glaze frits, metal oxides and colorants are also used for glazes. Electrolytes such as sodium silicate or diphosphate are added to reduce the energy consumption in the drying process by water reduction. Detailed description of the wall and floor tile manufacturing is presented in picture 2 bellow.

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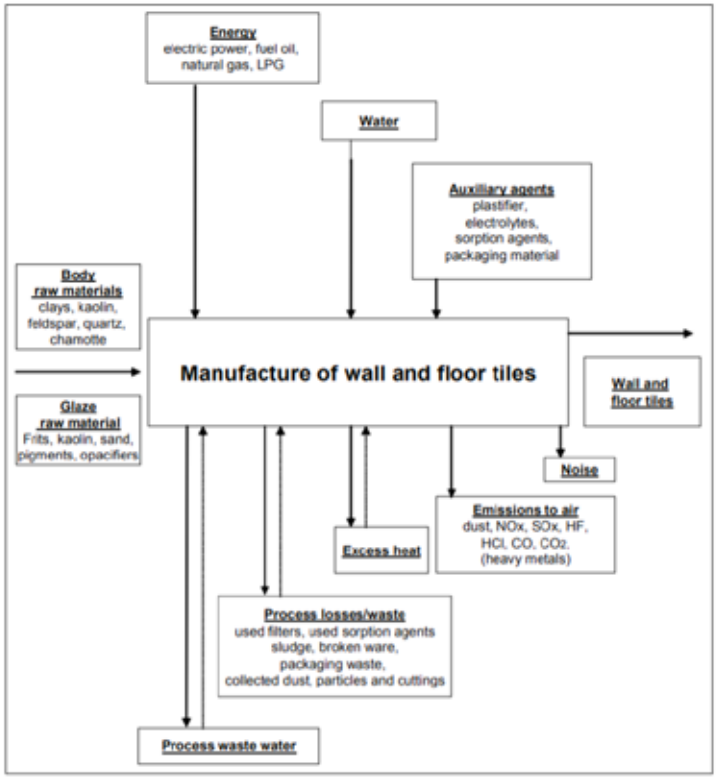

Picture 2. Detailed Description of the Wall and Floor Tile Manufacturing

Source: Euro Commission

Main Findings

Georgia has a history of wall and floor tile production, during soviet planned economy Tbilisi Ceramic Combinate, Floor Tiles Tbilisi Construction Material Combinate and Chkhari Floor Tile Factory were producing the above-mentioned products. However, in early 90's the production process stopped all over the country.

Demand Condition

Firstly, research evaluates the demand conditions within country and Caucasian region. In 2019 the ceramic tile imports to Georgia achieved about 53 million USD and Caucasian region import picked to 350 million USD. Due to real estate industry annual growth on average by 20 percent the ceramic industry has a relative growth indicator. Last ten years ceramic tile imports to Georgia is growing gradually with minor fluctuations, that is presented in chart 5 bellow:

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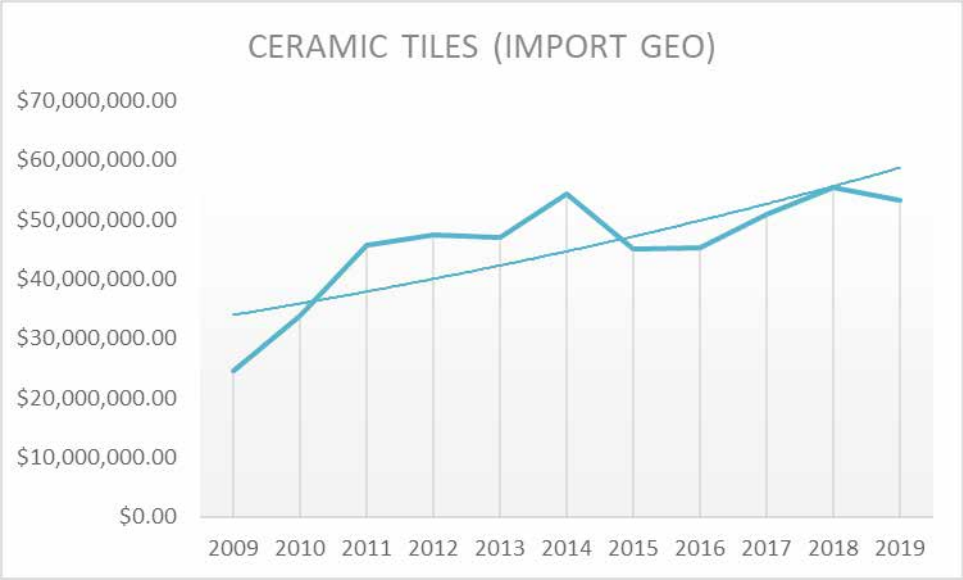

Chart 5. Ceramic Tiles, Import

Source: Geo Stat

Research identified distribution of types of paving spaces by areas: residential area in Tbilisi 27 000 000 square meters, Office area in Tbilisi 892 500 square meters, commercial space in Tbilisi 887 280 square meters and storage space in Tbilisi 1 098 000 square meters. It is obvious that 90 percent of Georgian demand comes on inhouse application ceramic wall and floor tiles.

From regional perspective Russian Caucasus consumes 60 million USD tiles, Ukraine on average imports of 170 million USD worth of tiles, respectively Turkey imports 110 million USD tiles, Azerbaijan imports on average 30 million USD ceramic tiles and Armenia imports stably 7 million USD worth of ceramic tiles. Hence, total regional market fluctuates in the range of 350 million USD. Given condition gives opportunity to build factory with production capacity of 3 000 000 square meter tile production annually.

Factor Endowment

Secondly research evaluated production factor endowment for the whole ceramic industry and identifies that 90 percent of raw materials needed for floor and wall tile production exists locally in Georgia. Map 1 bellow presents the different geographical clay and send resource locations that are the major components for wall and floor tile production.

Second important factor is educated, professionally skilled labor force and respective technological lines for production process maintenance. Such factors do not exist in Georgia and it should be created through international license purchases and professional trainings through expatriates. Production technology is not comprehensive and innovative accordingly those two factors does not experience scarcity on the International markets, Italy is main supplier of production lines and technologies.

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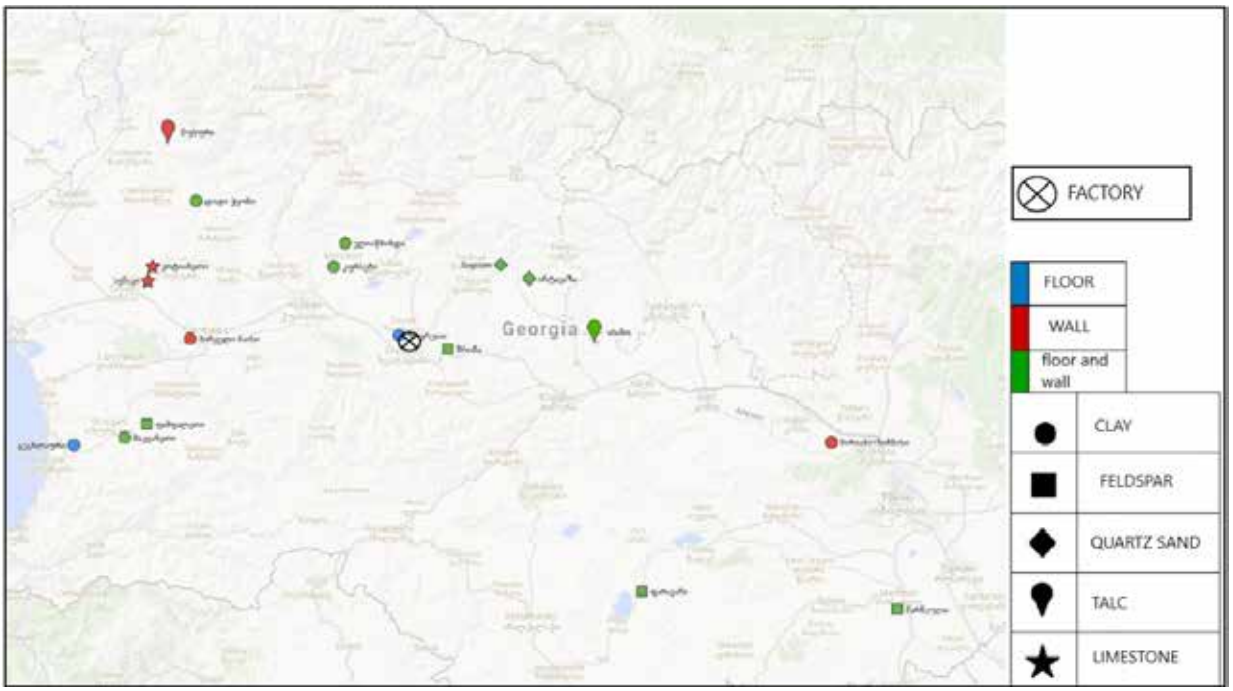

Map 1. Geographical Clay

Source: Georgian Industrial Development Group

Raw material deposits should become operational and supply chain needs to be organized, because no extraction of raw materials takes place on the given stage. Also, it is worth to underline that cheep energy resources in the region support ceramic industry development in general.

Related and Supportive Industries

Ceramic floor and wall tile industry is characterized with extremely law dependency on the related and supportive industries, mainly industry does not need any support from the suppliers. Occasionally based on the production peculiarities certain raw materials need to be pre-dried, for example sand may be dried using fluidized bed technology and rotary dryers may be used. Many refined ceramic raw materials are purchased from specialist suppliers – usually in a dry state. Also, it should be remarked that some synthetic materials such as silicon carbide may be manufactured by specialist suppliers but may still need to go through the comminution process.

Firm Strategy, Structure, and Rivalry

From competition perspective inside Georgia industry is characterized by first entry advantage because no competitor exists inside the country. However, from the regional scope one ceramic tile factory operates in Armenia and another one in Azerbaijan, however they satisfy only 4-5 percent of the regional demand. First stage strategy is to substitute imports and then develop export promotion strategy.

Conclusion

To sum up, Georgian ceramic tile industry has internal and regional competitive advantage, that allows future local manufacturers to substitute imports and further promote exports in the region. According to the Porter's Dimond analysis all factors are favorable for ceramic industry development if proper government support and non-tariff barriers will be presented in future for national ceramic industry support and development.

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