

Globalization's Impact on the Usages of Imported and Local Building Materials in Jordan

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Abstract: *The process of choosing building materials is an essential part of the design process. Whenever architects and interior designers start to think about a project, one of the first things they consider is the materials that will be used in the production of the project. There is little research exploring the impact of globalization on the level of using imported and local building materials in Jordan. Therefore, it is necessary to examine the impact of globalization on the level of using imported and local building materials in Jordan and explore the impact of using imported building materials on the level of using local building materials in Jordan.*

For the purpose of this study, data gathered about the usage of imported building materials in Jordan and analyzed to observe any drops or rises of using specific building materials. Also, this data was used to understand the most common imported building materials used.

This study requires a total understanding of the relationship between globalization and building materials and their impact on the economy and the usage of imported and local building materials. comprehension of this relationship will make it possible to find solutions to integrate the use of imported building materials and local materials.

Globalization impact can be observed in other sectors in Jordan. The building materials market is being affected by the phenomenon of globalization. It was found that there is a noticeable increase in imported building materials or raw materials that are needed to manufacture building materials.

If the attitude toward the usage of local building materials in Jordan keep decreases and relying on imported building materials in the construction section, there will be a recession in the local building materials in Jordan. Having this recession will have a greater impact on the building materials and local factories in the long term.

Index Terms: *Architecture, Building Materials, Globalization, Imports, Interior Design.*

I. INTRODUCTION

Choosing building materials is an essential part of the design process. Whenever architects and interior designers start to think about a project, one of the first things they consider is the materials that will be used in the production of the project. Therefore, many design styles require specific materials to use, which reflects their philosophy in design. For example, the modern architectural style is defined by using iron, steel, and glass in buildings (Harvey, 1984; Robinson & Associates, 2003).

A lot of countries consider the building materials sector and

producing building materials as the main revenue source for their economies. For example, according to the Statistics Portal (2015), the U.S. sales of building materials in 2013 were \$260 billion. This figure is increasing with the noticeable development of building technology. Many local building materials have been replaced with a global alternative that reduced the demand on the local option such as, traditional mud bricks were replaced with the reinforced concrete, and many other materials followed the same trend like glass wood, and accessories (Mahgoub, 2004). According to Stiglitz (2002), globalization affected the prices of goods and services due to the easy flow of goods and services between international borders. The use of imported building materials may have different effects on the construction sector, such as reducing the use of local materials and make the development of local companies harder (Ofori, 2000). Globalization is defined as "strengthening the dominance of a world capitalist economic system, supplanting the primacy of the nation-state with transnational corporations and organizations, and eroding local cultures and traditions through a global culture." (Kellner, 2002, p. 285). Therefore, globalization helps to import goods and services, including building materials. Due to the importation of building materials, the use of local building materials is being abandoned because of the major focus on the international architectural style which is being used to increase its global recognition (Rowe & Kuan, 2002). On the other hand, abandoning the market of local materials will affect the local economy (This Day Live, 2013). Also, several studies discussed the impact of globalization on architecture from different perspectives, such as the place identity, trend, and technology (Eldemery, 2009; Elshahed, 2010; Kheir, Mir, & Tingwei, 2013). However, there is a gap in exploring the globalization effect on the economy in terms of building materials. According to Dreher (2006), Jordan is ranked as the 46th in the globalized countries ranking. Therefore, this study will focus on two Jordanian cities, the capital Amman, which is considered an urban location, and Irbid, which is considered as a rural location. There is little research exploring the impact of globalization on the level of using imported and local building materials in Jordan. Stone is a commonly used material in building in Jordan (Khammash & Rees, 1995). Therefore, it is necessary to examine the impact of globalization on the level of using imported and local building materials in Jordan and explore the impact of using imported building materials on the level

Revised Manuscript Received on August 05, 2019

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of using local building materials in Jordan. Also, there are new advancement on the usage and development of building materials on a daily basis, which bring the attention to the idea of using more modern and advanced building imported building materials (Khajuria & Salhotra, 2019). This study requires a total understanding of the relationship between globalization and building materials and their impact on the economy and the usage of imported and local building materials, comprehension of this relationship will make it possible to find solutions to integrate the use of imported building materials and local materials, which will positively affect Jordan's economy and enrich the local materials market.

II. REVIEW OF LITERATURE

A. Impact of Globalization in Jordan

Globalization is a broad topic that has different dimensions. Therefore, it is hard to identify a singular definition of globalization, which makes it hard to generalize the term's use in every situation (Nayef, Al-Rodhan, & Stoudmann, 2006). Nayef, Al-Rodhan, and Stoudmann (2006) define globalization as "a process that encompasses the causes, course, and consequences of transnational and transcultural integration of human and non-human activities." (p.2).

From the previous definition, one can comprehend the different aspects and features of globalization and how they involve almost all aspects of society such as economic, cultural, and political aspects. Regardless of the positive effects of globalization, such as the technological and media flow, which made the interaction between the different cultures and communities easier (Ayna, 2011). However, this study focuses on some of the negative impacts of the globalization phenomenon.

A more applicable definition of globalization for this study by Kellener (2002) is "strengthening the dominance of a world capitalist economic system, supplanting the primacy of the nation-state with transnational corporations and organizations, and eroding local cultures and traditions through a global culture" (p. 285). As can be comprehended from the definitions of globalization, its impact is seen everywhere in culture, economy, and politics.

Another definition of globalization, according to the International Monetary Fund (1997) is "the growing economic interdependence of countries worldwide through the increasing volume and variety of cross-border transactions in goods and services and of international capital flows, and also through the more rapid and widespread diffusion of technology" (p.45). The ease of importing goods and services through the borders of any country should have an impact on the usage of the goods and services in the country (Ofori, 2000). When there is a cheaper imported service of materials in the market, the usage of this material will increase in the country (Balsvik, Jensen, & Salvanes, 2014).

When comparing the different definitions of globalization, one can see some kind of pattern that indicates the different dimensions of globalization such as, economic, political, and

cultural dimensions. The different scholars that defined globalization are suggesting that globalization is unifying the world from its different dimensions, and trying to create a global culture which combines the different cultures of the world. Globalization is operationally defined in this research as the level of imported goods and services within the Jordanian borders. Jordan as a developing country is affected by the globalization phenomenon.

One of the clear impacts of globalization on Jordan is the adoption of the policy of economic liberalization in the early 1990s which led to new adjustment to the economic programs (Guesmi, Youcefi, & Benbouziane, 2012). This adaptation was supported by the World Bank and International Monetary Fund (Guesmi et al., 2012). The most noticeable changes are the removal of the restrictions on interest rates, and the removal or reduction of the restriction on foreign exchange transactions and entry barriers (Guesmi et al., 2012).

Globalization impact can be observed in other sectors in Jordan. The building materials market is being affected by the phenomenon of globalization. According to MIT (2015), Jordan's value of imported goods in 2012 is \$21,8 billion compared to \$12,1 billion in 2005, \$4,39 billion 2000, and \$4,33 billion in 1995. \$33,8 million for stone and glass, and \$205 million for metals, compared to, \$62,2 million, \$66,4 million, and \$157 million for stone and glass, and \$463 million, \$359 million, and \$1,07 billion for metals in 1995, 2000, 2005, and 2012 respectively.

B. Globalization and Building Materials

Agarwal (1976) argues that the adoption of Western building materials has a negative impact on the planning and building process in the Middle East. Agarwal (1976) introduced the negative effects of the usage of the adopted building materials as the destruction of architectural heritage, as well as the impact on the local economic context due to abandoning the usage of local building materials.

According to Riley (2011), the global market is affecting the building materials choosing process. Since the global market provides an easy way to import building materials and a big selection of building materials, many designers start to make a decision according to the fashion or trend, appearance, and the cost over the function (Riley, 2011). The research shows that there are unsustainable implications of using some types of materials such as concrete, without paying attention to the functionality of the material (Riley, 2011).

Observation of the modern architecture style reveals that most of the buildings are using the same materials such as steel, concrete, and glass over and over. Most of the famous buildings are using these same materials such as, Hearst Tower in New York which was designed by the architect Norman Foster who used mainly glass, and steel in the building design (Foster and partners, 2000). Also, the Guggenheim Museum

Bilbao by Frank Gehry appears to use the same materials as Foster's building (Pagnotta, 2013).

C. Building Materials in Jordan

Limestone is considered one of the most common building materials in Jordan (Al-Nimry, 2012; Khammash, & Rees, 1995). Local Jordanian mining companies produce the limestone for the Jordanian market (Naghoj, Nafi, & Maaitah, 2010; Moh'd, 2007). Harrison (1993) defines limestone as "a sedimentary rock composed mainly of calcium carbonate (CaCO₃), accruing as Calcite or occasionally Aragonite in recent deposits." (p.2). Also, there are several local building materials in the Jordanian market, such as yellow stone used in building arches, stained glass, and different types of wood (Alsubeh, & Al-Rawashdeh 2013).

D. Globalization and Use of Local and Imported Building Materials in Jordan

As mentioned above regarding the types of imported building materials in Jordan, the usage of these materials is mainly in the construction process, and the exterior façades of the buildings. Most of the structures that use the imported building materials are commercial buildings or commercial residential projects such as the previously mentioned projects (e.g., The Abdali Project, The Jordan Gate Towers, and Queen Alia International Airport).

The usage of imported building materials in these projects occurs for different reasons. One of the reasons that the major projects in Jordan are built by using imported building materials is that the productions of local building materials in Jordan does not fit with the size of these projects. For example, the [Abdali Project](#), which includes a total built area of over 1.8 million m², consists of residential apartments, office spaces, hotels, and serviced apartments as well as retail outlets and entertainment facilities (Abdali Investment & Development, 2006).

The significance of importing building materials are addressed in the Department of Statistics (2014) report that shows that the imported building materials comprise 1.46% of the total imports in 2013 compared to 1.29% in 2005. The difference between the two years may not be of much significance, but it shows that there is a rising level of importing building materials, and this figure may increase if the process of using imported building materials instead of local building materials increases.

E. Building Location Influence on the Usage of Building Materials

Kim et al. (1998) argue that when using local building materials, the distance of transportation will be shortened. Also, the usage of local building materials is better for the climatic condition of that location since the materials came from the same area, and the same climatic region (Kim et al., 1998).

The location of the building is an important factor in terms of using materials (Morel, Mesbah, Oggero, & Walker, 2001). There are differences in the building materials used in different locations. Hence, upon an observation in a different part of Jordan, one can notice that the major cities are using

more imported building materials than the rural or the small cities. According to the researcher observations, the rural areas of Jordan are still using the locally manufactured building materials instead of imported building materials. This phenomenon may be due to the price difference between imported and local building materials.

The difference between the prices is mainly because of the taxes levied on imported building materials. Also, another important factor affecting the price and the usage of imported building materials is the transportation of raw building materials (Morel, et al., 2001). For example, 8% of the overall energy used in the UK is used in manufacturing and transporting building materials (Morel, et al., 2001).

The prices of building materials are rising and this concerns the governments around the world (Danso, 2013). To provide lower cost building materials, people should increase the usage of the locally produced materials, so they don't pay extra for the transportation from urban areas to rural areas, and the taxation of imported building materials (Danso, 2013; Ogunkah & Yang, 2012).

III. METHOD OF INQUIRY

This article focuses on the impact of globalization on local building materials in Jordan. This understanding will allow us to have a more meaningful understanding of this phenomenon, which will help in creating solution that will improve the linkage between culture, architecture and design, and globalization in order to improve professional practice in a way that conserve traditional and local practices while being up to date with the global trends in the build environment. For the purpose of this study, data were gather about the usage of imported building materials in Jordan and analyzed to observe any drops of rises of using a specific building materials. Also, this data was used to understand the most common imported building materials used through collecting import of building materials statistics from several databases and census created surveys.

IV. DISCUSSION

This study aims to examine the impact of globalization on the level of using imported and local building materials in Jordan and explore the impact of using imported building materials on the level of using local building materials in Jordan. Based on the information collected, one can notice that there is a noticeable increase in imported building materials or raw materials that are needed to manufacture building materials. This increase will affect the local building materials market. Also, the imported building materials are getting more acceptable as their prices begin to be more suitable for the costumes. One can observe that the use of local building materials is reducing because international architects are following the modern architectural style. In the long term, this could affect architecture and design students since those international architects are considered role models in the architecture and design world and they are being exposed to their project during their studies. This



may lead future architects and designer to abandon the usage of local building materials and focus on the types of materials that international architects are using. Imported building materials are starting to appear prominently in the major architectural and design projects in Jordan, such as The Abdali Project, The Jordan Gate Towers, and Queen Alia International Airport. After observing these major projects in Jordan, one can see the new types and non-traditional building materials used in these projects, such as American hardwoods, African hardwoods, European hardwoods, deformed steel bars, laminated veneer lumber, glazed ceramics, unglazed ceramics, interior decorative glassware, and other types of building stone (MIT, 2015; Arab Building Materials, 2009).

The change of the value of imported building materials can be noticed by observing the years that the major project started to be constructed in Jordan, The Abdali Project in 2006 (Abdali Investment & Development, 2006), The Jordan Gate Towers in 2005, and Queen Alia International Airport in 2007. The imported building materials are being used in the building process in Jordan and this is negatively affecting the level of using the local building materials, such as the local limestone, which is being produced and used in Jordan (Johansson, Ouahrani, Shaker, Awadallah, Blomsterberg, HAKansson, Hellström, & Kvist, 2009).

The consumption of imported building materials has different effects, such as the usage of local building materials, and the local labor market (Balsvik et al., 2014). On the other hand, the local building materials are much cheaper to use in construction; since Jordan produces the limestone, it is easier and cheaper to transport and use it (Johansson, et al., 2009; Kim, Rigdon, & Graves, 1998).

It is logical to say that a rural location will have a higher price of transporting building materials than the urban locations where most of the building materials companies are located. For example, Arab Building Materials Company, Jordan Construction Materials Company, Kensington International Group, Wataneyah General Supplies Company, Ltd., M.S, and Import and Export Al-Shraideh. According to Company List (2015), all of the previously mentioned companies are located in the capital of Jordan-Amman.

Also, from the above-mentioned construction projects in Jordan, one can observe that all of these projects are being built in Amman which is an urban location. Research has also found that the more we lift the barriers in the construction sector, the more competitive foreign construction sector will be involved. This attitude will reduce the chance of expanding the local construction sector (Raftery, Pasadilla, Chiang, Hui, & Tang, 1998).

V. CONCLUSION

If the attitude toward the usage of local building materials in Jordan keep decreases and relying on the imported building materials in the construction section, there will be a recession in the local building materials in Jordan. Having this recession will have a greater impact on the building materials and local factories in the long term. Recommendations to

reduce relying on imported building materials, are going to be based on reducing sales taxes in locally manufactured and produced building materials, and provide a better industrial and economic environment for local building materials in Jordan. It should be noted here that Jordan is the case study of this research. However, the understanding of this research can be applied across countries and cultures.

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