

Alternative Manufacturing Technique in Glass Industry for Developing Countries: Fused Glass , “Zumrut Art Of Glass Model” and Its Applicability in Bosnia Herzegovina Economy

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Abstract: Tourism industry plays an important role in the sustainable development process of the countries. Giftware (souvenir,craft) sector also forms one of the important elements of tourism revenues.. However, finding same types of the products in many countries around the world is the signal that the sale of goods loose their competitiveness and so, some innovations are needed. In this study, the contributions of new production techniques in glass industry, to which increasement of the export by taking the advantage of niche market and reducement of the unemployment, are examined for tourism oriented souvenir industry. The "Glass Fusion Technique" is discussed in order to concretize the purpose of this study with “Zumrut Art of Glass” model and the possibility of application into Bosnia and Herzegovina economy.

Keywords: Tourism, Souvenir, Gift, Craft, Fused Glass

Introduction

There are some sectors, playing important roles for not only developed countries but also developing ones; such as textile industry, glass industry, otomobile industry, tourism sector. However, for all, tourism is a common vehicle for all economies.

Tourism is a rapidly developing global industry and has great economic significance for the economy (Gunce, 2003). It is increasing at annual growth rate between %4 - %7 (Turner & Reisinger, 2001).



Table 1: International Tourist Arrivals and International Tourism Receipts Source between 1990-2008
Source: World Tourism Organization

International tourist arrivals have continued to grow steadily from 25 million in 1950 to 684 million in 2000, and they have reached 922 million in 2008. Tourism has been becoming one of the largest and fastest growing economic sectors in the world (World Tourism Organization, 2009).

Tourism has been one of the major international trade categories. For example, the overall export income generated by international tourism including passengers transport reached US \$ 1.1 trillion in 2008, or US \$ 3 billion a day. World's Export of commercial services consist of 30% from tourism and overall export goods and services 6% consist of tourism. Globally, as an export category, after fuels, chemicals and automotive products tourism ranks fourth. For many developing countries, tourism is one of the main income source and the number one export category, providing much needed employment and opportunities for development (World Tourism Organization, 2009).

	International Tourist Arrivals (million)							Market share (%) 2008*	Change (%)		Average annual growth (%) '00-'08*
	1990	1995	2000	2005	2006	2007	2008*		07/06	08*/07	
World	438	534	684	804	853	904	922	100	6.1	2.0	3.8
Europe	265.0	309.5	392.6	441.8	468.4	487.9	489.4	53.1	4.1	0.3	2.8
Northern Europe	28.6	35.8	43.7	52.8	56.5	58.1	57.0	6.2	2.8	-1.9	3.4
Western Europe	108.6	112.2	139.7	142.6	149.6	154.9	153.3	16.6	3.6	-1.1	1.2
Central/Eastern Europe	33.9	58.1	69.3	87.5	91.4	96.6	99.6	10.8	5.6	3.1	4.6
Southern/Mediter. Eu.	93.9	103.4	139.9	158.9	170.9	178.2	179.6	19.5	4.3	0.8	3.2
Asia and the Pacific	55.8	82.0	110.1	153.6	166.0	182.0	184.1	20.0	9.6	1.2	6.6
North-East Asia	26.4	41.3	58.3	86.0	92.0	101.0	101.0	10.9	9.8	-0.1	7.1
South-East Asia	21.2	28.4	36.1	48.5	53.1	59.7	61.7	6.7	12.3	3.5	6.9
Oceania	5.2	8.1	9.6	11.0	11.0	11.2	11.1	1.2	1.7	-0.9	1.8
South Asia	3.2	4.2	6.1	8.1	9.8	10.1	10.3	1.1	2.6	2.1	6.8
Americas	92.8	109.0	128.2	133.3	135.8	142.9	147.0	15.9	5.2	2.9	1.7
North America	71.7	80.7	91.5	89.9	90.6	95.3	97.8	10.6	5.2	2.6	0.8
Caribbean	11.4	14.0	17.1	18.8	19.4	19.8	20.2	2.2	1.6	2.0	2.1
Central America	1.9	2.6	4.3	6.3	6.9	7.8	8.3	0.9	12.0	7.0	8.4
South America	7.7	11.7	15.3	18.3	18.8	20.1	20.8	2.3	6.5	3.6	3.9
Africa	15.1	20.0	27.9	37.3	41.5	45.0	46.7	5.1	8.4	3.7	6.7
North Africa	8.4	7.3	10.2	13.9	15.1	16.3	17.2	1.9	8.5	4.9	6.7
Subsaharan Africa	6.7	12.7	17.6	23.4	26.5	28.7	29.5	3.2	8.3	3.1	6.7
Middle East	9.6	13.7	24.9	37.9	40.9	46.6	55.1	6.0	14.0	18.1	10.5

Table-2: International Tourist Arrivals by (Sub) region

Source: World Tourism Organization

As it can be seen from the figure, Europe has %53,1 share from all international arrivals with 489,4 million people in 2008. However, Bosnia has just 212.749 international tourist arrivals in the same year (Federation of Bosnia and Herzegovina Federal Office Of Statistics, 2009) which is equal to %4 from Europe tourist arrivals.

According to UNWTO's Tourism 2020 Vision reports, international arrivals are expected to reach nearly 1.6 billion by the year 2020. The total tourist arrivals by regions shows that, tourism will grow and the top three receiving regions will be Europe (717million tourists), East Asia (397 million) and the Americas (282 million) (World Tourism Organization, 2009).

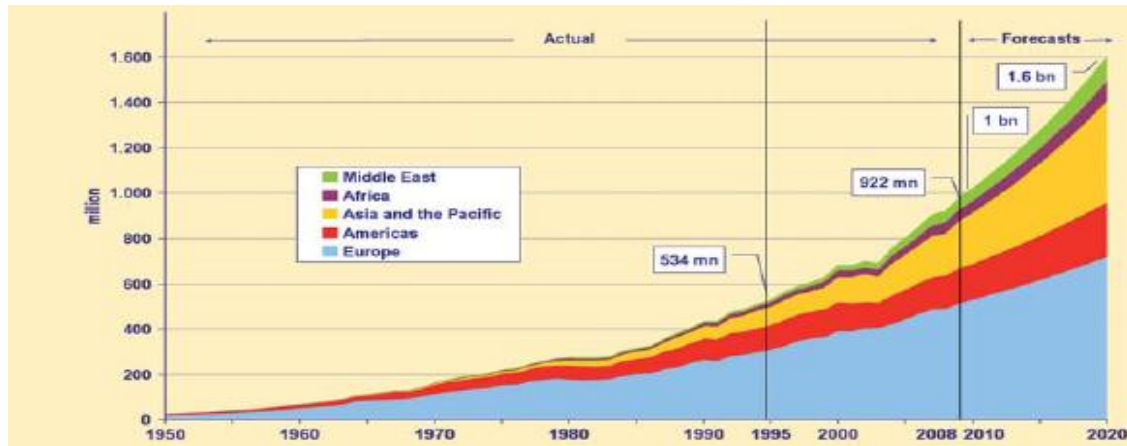


Table 3: Forecasting of International Tourist Arrivals Between 2010-2020

Source : World Tourism Organization

The Effect of Tourism on Economy

Tourism does not only affect the countries in one way. It has also positive effects on the development of the physical, social, cultural and economic environment of a country (Gunce, 2003). Tourism has positive effects on economy in different ways. According to the United Nations foreign exchange earnings, the contribution to government revenues, the generation of employment, the stimulation of infrastructure investment and the contribution to local economies are some of them (Torrent, 2008; United Nations Environment Programme). Tourism contributes to the worldwide gross domestic products nearly 5%, also it contributes to employment directly-indirectly and it is estimated 6-7% of the overall number of jobs which are provided by tourism (World Tourism Organization, 2009). For developing countries, where tourism is a key economic sector, the importance of tourism tends to be higher for economy (World Tourism Organization, 2009). There are some activities which are relevant to the tourism and have impacts on the economy in positive way during the journey. One of them is shopping.

The Importance of Shopping During a Journey

Shopping might be the most universal activities, despite the fact that it is seldom considered as a primary reason for travel (Turner & Reisinger, 2001). Whether international or domestic tourism, for both, the second most important expenditure item is shopping after accommodation (Turner & Reisinger, 2001). For a tourist, a tour can not be a complete traveling experience without shopping (Hudman & Hawking, 1989). Shopping is a common and preferred tourist activity in different locations, and for today's travelers, tourism and shopping are integrated to each other. Shopping activities include especially souvenir, because tourists need to bring home something tangible to concretize and preserve their memories for their trips (Gordon, 1986). Souvenirs are related to tourism as commercially produced and purchased object to remind the purchaser of the experience (Swanson & Horridge, 2006). Souvenir products also include craft products which are called craft souvenir.

What effects tourists when they decide to buy souvenirs? Turner and Reisinger (2001) found three important product characteristics for tourists purchasing cultural products: value (range, quality), product display characteristics (color, display, packaging, size), and uniqueness (memory of the trip). The ease of cleaning, care, and packing were of particular importance for travelers to reach the decision of craft buying (Hair et al., 1998).

Through crafts, tourists generally prefer the products which are valuable work of the hand. According to UNESCO report (2007), there is a wrong impression that tourists prefer industrialized goods rather than handmade products. Especially nowadays, mass-produced polyester products which seem very simple, are sold everywhere. Also textile crafts can be found in every destination. Finding same types of the products in many countries around the world signals that the sale of goods lose their competitiveness and so, some innovations are needed.

In this study, we would like to emphasize on advantage of the craft sector for developing countries. As generally developing countries has labour intensive sectors. For production of craft, sector also needs cheap labour force. According to UNESCO report (2007) the economic characteristics of the craft sectors are:

- The handicrafts sector requires minimum expenditure and infrastructure to establish as it is a home-based industry. Therefore it can create jobs with minimum cost.
- In general this sector uses raw materials which are available locally.
- Product adaptation is less expensive than investing in energy, machinery or technology because inputs required can easily be provided.

The Worldwide Situation of Craft Sector

Handicrafts have been developing without specific political strategies and they directly depend on demand generated by tourism industry (UNESCO, 2007). According to report released by UNESCO (2007) the national accounts do not fully include handicraft activities. However, handicrafts are always parts of the culture of a nation and represent a key component of socio-economic life. Many countries face to some difficulties in collecting data about craft sector because there is an important lack of data on the craft sectors.

In some industrialized countries, craft sector plays an important role in their economy. For example in Italy, 24% of national enterprises belong to the crafts sector in which 1/5 private sector workers are employed. In Italian total Gross Domestic Products (GDP) ,craft exports share is %17. Moreover in developing countries craft sector has a great importance in economy. In Colombia, crafts production represents income of approximately US\$ 400 million in a year and brings in a monthly income to the workers between US\$ 140 to 510. Crafts exports (not include sales to tourists) approximately amount to US\$ 40 million per year. Two-thousand shops and 400 bulk and export trading companies, where 800,000 people are employed, affected by this important tourism market. Tunisia is another example. Craft sector is employing 300.000 people (%11 of the active population) of whom are working 4 hours a day on a part time-time basis. Their production contribute to Gross Domestic Income an average of %3,8 and provide US\$ 2,400 income per household (an average of 5 members). In Morocco, Ministry of Tourism measure the volume of the these sector at %19 of total GDP. Morocco export handcraft products approximately valued US\$ 63 million.

Nowadays, there is a problem in souvenir industry. Finding same types of the products (for example: textile products: t-shirts, carpet, cheap polyester products) , in many countries around the world is the signal that the sale of goods lose their competitiveness and so, some innovations are needed.

In this study, we would like to introduce an innovation in craft, souvenir and giftware. Our main method is Fused Glass Technique that is used in Turkey for touristic craft and souvenir industry. Not only for just giftware, it can also be applied in Tableware, Decoration, Kitchenware, Hotel Products, Electrical Equipments etc. So, this new technique affects different sectors in not only domestic markets but also export markets.

Fused Glass and “Zumrut Art Of Glass” Model

What is fused (fusing) glass? It is a process of joining pieces of glass by melting them together and the main aim of fusing is to produce a solid glass sheet from individual pieces of glass which are arranged beside or on top of one another by melting together in a kiln (Eberle, 1997).

History of Zumrut Art of Glass

Zumrut Art of Glass was established in 1981. The company entered the glass sector with decorative items by using the techniques which are popular during that time: stained glass and sand blasting. In 1997, the company decided to produce new products by using unique technique which was not available in Turkey. It brought fused (fusing) glass technique to Turkey. The company also desired to enter the giftware, souvenir sector by means of this unique technique. After preparing the concept products and marketing, they got a lot of orders from touristic places. In 2002, the company participated giftware fair which was in Germany and this date was the starting of entrance to the foreign markets. In 2005, the company invested to the water jet CNC machine for putting the limits away for designs. After this investment, all the designs have been prepared in computers with benefiting from the technology.

In 2006, to satisfy the customers' request, the drop technique which gives opportunity to produce locational and promotional products was applied into the production.

Product Concept

Zumrut Art of Glass product concept consist of Giftware, Tableware, Souvenir, Tea and Coffee Sets, Sugar Plates, Candle Holders, Magnets, Key Rings, Clocks, Picture Frames, Glass Tables, Plate Sets, Fruit Bowls, Self Service plates, Tea-Coffee Trays, Vases, Ashtrays, Chandeliers, Door Glasses, Glass Sinks, Mirror Frames, Bowls, Dinner Sets.

Employment Situation

There are 900 sales points, which are located generally in touristic places, of the company and it has 10 own exhibition centers. Zumrut Art of Glass is employing directly 25 workers in manufacturing department, 20 persons in exhibition centers as salesperson position, 10 staff in different departments. Also company is employing 150 persons indirectly.

Production Process

The production steps are made up:

1-) Flat glasses are provided firstly as plates in different thicknesses for products of which their production is carried out by utilizing fusion glass melting technology.

2-) The necessary glass cutting processes are performed according to design and pattern of the product that will be produced. While the glass patterns are cut manually in the cutting workshop, the design cutting is carried out in Water Jet CNC bench. The water jet machine is able to cut all kinds of materials as two dimensional by operating in the CNC machines' principle. The cutting carried out with water is able to see thinner details and carried out milimetric cuttings in comparison to other technologies.

3-) The pattern and design glasses that have been got together in the production department are then placed into molds in the fusion glass furnaces after the necessary staining are done and the furnaces are made ready in order to perform thermal processing. All the Works taht have been carried out in the production are hand made and all the staining is carried out between two glasses. After 800 C thermal processing is applied, since the fusion glass furnace is kept for cooling, tension of the glass product has been taken and it is more resisting in comparison to normal flat glass.

4-) For souvenir industry, plastic drop process is applied into the products . Plastic drop is poured on photographs by labeling the which are demanded with the drop label technique and the photographs has been protected between the label and the drop. All kind of design, figure and logo are able to be applied on the glass with this technique.

Domestic and Foreign Market Situation Of Zumrut Art of Glass

Domestic market has 60% share and foreign market has 40% in total. Many of products which are manufactured in fused (fusing) glass technique are sold in Antalya, Fethiye, Bodrum, Marmaris, Kusadasi, Izmir, Ankara, İstanbul in Turkey with different points. The companys' exports markets consists of 15% of USA, 75% of EU and %10 others. 2 million pieces of products are manufactured and sold in both foreign and domestic market every year. The most popular products are magnets which are very easy to pack and hold, sugar plates which reflect the culture of the location, tea sets with different figures, mini vase and wall decoration gifts.

Discussion

Developing countries, especially nowadays, try to continue their development process with different methods. Some of them are transferring capital from agricultural to industrial production, some of them are try to increase earnings from different industry. However, there is a hard competitiveness in all industry for all countries and this creates a hard situation for developing ones. That means developing countries should find new methods which can be a competitive to continue their development process by using their rich and cheap labour force.

Tourism is very important tool for development. Some of governments advertise their countries with different methods to increase the number of tourist arrivals. Some of them organize festivals, some of them give advertisements to TV programs to introduce their countries nature, the places for sight-seeing etc. Bosnia should also use methods to introduce its unique nature, touristic opportunities and historical background.

Whether there is a little increase in tourist arrivals, Bosnia Herzegovina with the share 4% from total from Europe that has 53,1% share from all international arrivals with 489,4 million tourists, Bosnian government should implement some policies to increase the share in the Europe. According to forecasting reports shows that tourist arrivals will continue to grow in Europe. In the light of this information, Bosnia can increase and take advantage of tourism sector if the government apply important policies into tourism industry for sustainable development.

Account deficit, unemployment and low income level constitute important economic problems in Bosnia. 1.708.000 persons are in the working age population and 226.000 persons are unemployed (Federation of Bosnia and Herzegovina Federal Office Of Statistics, 2009). Tourism oriented investments to fusing glass techniques in souvenir industry will not only help decrease of unemployment, but also contribute to increase of the export with its geographical advantages. Bosnia Herzegovina, which is located in the middle of Europe where the estimated tourist arrival number will be 717 million in 2020, can use the advantage of minimum cost investment into the craft industry, which will affect whole economy like a chain not only with retail shopping but also with export trade.

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