

The key factors affecting the competency in value addition to gem and jewellery in Sri Lanka

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Abstract

Gem and jewellery industry in Sri Lanka plays a vital role contributing immensely to foreign exchange earning to the country's economy. The industrial value chain begins with gem mining and ends with retailing of jewellery while, several stages are included amid. It is imperative to be discerned that every stage involves trading, resulting export of a larger amount of semi-finished products without adding the premium value which creates lack of competitiveness. Statistical data illustrates a clear disparity in terms of revenue generated through the gem exports as opposed to jewellery exports. Thus, the discrepancy between country's resource capacity and its level of fabrication has inspired to conduct this research work.

The main objective of this study is to explore the key factors which cause the low competency in value addition of gem and jewellery industry in Sri Lanka. The required data was collected through an extensive literature survey and several face-to-face, in-depth interviews with experts in the gem and jewellery industry.

The results of the data analysis concluded that there are six major constraints affecting the low production and exporting of gem set jewellery in Sri Lanka, namely; lack of innovation, lack of technology, lack of market, lack of competent man power, lack of financial resources and lack of integration and long term plans as the main findings of this study.

Key words: gem and jewellery, value addition, export, competitiveness

1. Introduction

The gem and jewellery industry is a very important sector in Sri Lanka which is among the major sectors contributing to foreign exchange earnings. The industry has been identified as one of the thrust areas of export development by the government of Sri Lanka. Consequently, a proposal has been made by the government to upgrade the gem and jewellery export sector to a US\$ One Billion industry (Gem talk, 2008). Sri Lanka is a leading gem bearing country and retains as one of

the world's largest gemstone repositories, second only to Brazil (The Competitiveness Program, 2008). It is a major producer of fine quality gemstones among the five most important countries together with Myanmar, Brazil, South Africa and Thailand (Ali consultants, 2006).

Statistical data released from the National Gem and Jewellery Authority (NGJA) spanning the last eight years of the export of gem and jewellery illustrates, a clear discrepancy in terms of the revenue generated through gem exports as opposed to jewellery

exports. The value chain of the gem and jewellery industry consists of several steps such as; mining, cutting and polishing of rough gemstones, precision & calibration of stones, setting stones and diamonds in manufactured jewellery, exporting & retailing. It was evident that every step of the industrial value chain involves trading. This leads to export semi finished products at various steps without going through the entire value chain. It was observed that Sri Lankan people have resorted to export a larger amount of cut and polished gemstones without converting them into gem studded jewellery. This solitary observation led to explore the country's gem and jewellery industry in-depth especially the gem and jewellery export sector. Thus, the main objective of this research is to explore the key factors which cause the low competency in value addition of gem and jewellery industry in Sri Lanka.

The paper begins with a literature review on current circumstances of the export sector of Sri Lankan gem and jewellery industry, and the existing industrial opportunities and strengths. The paper then presents the research method, results and discussion. Conclusions and recommendations are finally presented in the paper.

2. Literature Review

The global gem and jewellery industry is based on mining of gemstones and precious metals. Distinctive for jewellery manufacture is the strong increase in value addition that takes place when the actual raw materials are processed into the end-product. The value chain for jewellery provides a typical example of a global value chain with most of the raw materials mined in developing countries while upstream activities and consumers are mainly located in developed countries (Coenen, Gijssbers, Maier, Molen,

Poliakov & Zee, 2009). Empirical evidence revealed that there has been a vast disparity between the capacity of gemstones as a raw material and its intensity for the application as end products – the gem studded jewellery within the developing countries. This scenario can be observed in different contexts of the world such as the imperial topaz in the region of Ouro Preto, Brazil (Gomes, Krucken & Morais, 2009); diamonds in South Africa (De Silva, 2007). According to this phenomenon, it is important to examine the Sri Lankan context as a rich gem bearing country in the world.

2.1 Gem and jewellery industry in Sri Lanka

The total value of the gem and jewellery trade at export and retail points is estimated at about Rs.55 billion annually. The market for gems and jewellery in Sri Lanka can be divided into 3 major sectors as; export market, domestic jewellery market and tourist market. Export market is the largest market segment in value terms which consists of four main product categories namely; cut and polished gemstones, jewellery, diamond jewellery and *geuda* (refers to an unprocessed variety of corundum). Sri Lankan gems and jewellery are exported to more than 60 countries (National Gem & Jewellery Authority, n.d.). A critical point had observed when analyzing the gem and jewellery export market segment; the vast discrepancy in country's resource capacity and its level of fabrication. The export figures of Sri Lankan gem and jewellery industry differ enormously relatively to the other Asian manufacturing centers. A comparative analysis on gemstone exports vs. jewellery exports within the Asian countries in year 2000 shown in Figure 1. According to the figure, the export figures of Sri Lanka are highly differing from the export figures of India, Thailand and China.

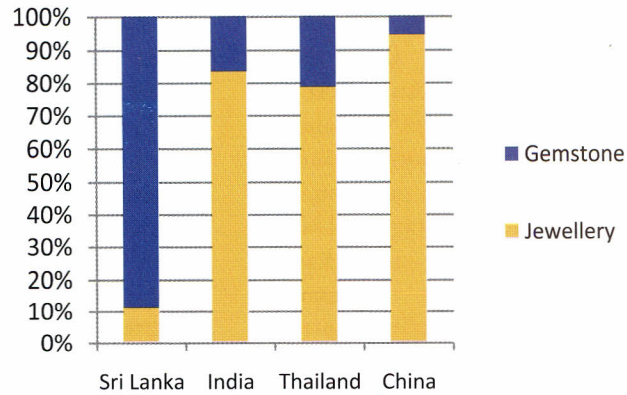


Figure 1: Jewellery and Gem Exports from Asian manufacturing centers in 2000 (US\$ Million)
 Source: Adapted from Competitiveness Strategy (2002)

Statistical data spanning the last eight years of the export of gem and jewellery illustrates, a clear discrepancy in terms of the revenue generated through gem exports as opposed to jewellery exports in the gem and jewellery industry of Sri Lanka. Figure 2 demonstrates the difference of the revenue generated from the gem and jewellery exports since 2004 up to 2011.

This discrepancy between the resource capacity and its level of fabrication has inspired a handful of studies (A competitiveness strategy, 2002; Ekanayake & Abeyasinghe, 2010), concerning the Sri Lankan gem and jewellery industry.

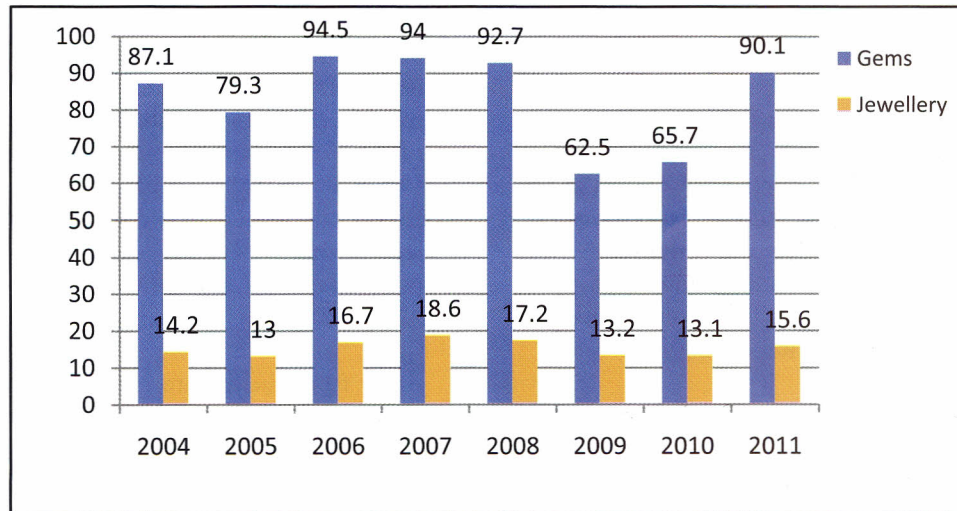


Figure 2: Statistical data of the exports of gems and jewellery (value US\$ Million)
 Source: Adapted from National Gem & Jewellery Authority

The competitive nature of the industry has led more value chain activities such as gem testing, assaying, hall marking, certification, designing, branding, promotion and marketing. As the stones move downstream along the chain, value is enhanced. An expert's view is that an over 100% value addition takes place in the normal value chain activities from rough gemstones to jewellery crafting stage. This percentage is increased to more than 300% in the *genda* heat treatment process, where technological interventions add value to gemstones (Ekanayake & Abeysinghe, 2010). But, the bulk of Sri Lanka's mined resources is processed or has value added offshore. Disintegration of the industrial value chain and absence of knowledge transferring vastly affect the ineffective flowing of raw materials from first step (mining) to the end which is finished gem studded jewellery (A competitiveness strategy, 2002).

The Competitiveness Program (TCP) was carried out in Sri Lanka from July 2004 to November 2007. Purpose of the TCP was to improve competitiveness of Sri Lanka in the global marketplace by continuing the support provided under the predecessor task order, The Competitiveness Initiative (TCI) (2000-2003). The preliminary observations of the Initiative concluded that although Sri Lankan gems are widely viewed as some of the highest quality gems in the world, the gem industry lacked capacity and knowledge to translate this competitive advantage into high value jewelry exports (The Competitiveness Program Final Report 2008).

Sri Lanka Executive Forum (2002) explained that the export of the gem and jewellery sector in the year 2000 was US\$ 70 Million and the trade could project that the same materials could easily generate US\$ 110 Million in export revenue if Sri Lanka exports

25% of her gems in the form of a value added product, namely jewellery. This amounts to additional 50% revenue in foreign exchange. On the other hand if Sri Lanka could export 75% of her gems in the form of jewellery additional revenue of US\$ 100 Million could be generated in foreign exchange which amount to additional 150% revenue in foreign exchange. Immediate past Chairman of Sri Lanka Gem and Jewellery Association (SLGJA) Mr. Chanaka Ellawala has asserted; *"we still sell most of our gems in the form of loose gems rather than as jewellery. If you take export revenue, about 80 percent of export revenue is in gems and 20 percent in jewellery exports. We should have to sell more jewellery than gems because that gives more opportunity for value addition. But, Sri Lanka lacks the design capabilities, technology and man power to manufacture jewellery. So, that is an area that needs to be addressed"* (Malawa, 2008, p.7).

The fundamental fact to attain the premium value from the industry is to increase the proportion of finished jewellery products. It was evident that the low amount of gem studded jewellery exports has been occurring due to low production capacity in gem studded jewellery manufacturing sector. On the contrary, the extent of involvement of a country in manufacturing will depend on a number of factors, including the level of development of the export markets (Abor & Quartey, 2010). There is a large body of research concerning the relationship between export and productivity (Anh, Chuc, Ngoc & Nhat, 2007).

Apart from the literature related to the issue involved with the industrial value chain, it was needed to analyze the strengths and opportunities available within the existing practice.

2.2 Strengths and opportunities of Gem and Jewellery Industry of Sri Lanka

Sri Lankan gem and jewellery industry possess several strengths and enormous opportunities to make premium value by producing gem studded jewellery for the global market. Report of the competitiveness strategy for Sri Lanka's jewelry industry (2002) identified following strengths and opportunities of the gem and jewellery industry in Sri Lanka.

- Sri Lanka is one of the world's largest gemstone repositories.

Sri Lanka is a leading gem bearing country and retains as one of the world's largest gemstone repositories, second only to Brazil. It is a major producer of fine quality gemstones among the five most important countries together with Myanmar, Brazil, South Africa and Thailand. Sri Lanka is said to have the highest concentration of gems in the world. The national gem deposit surveys explored, approximately 90 percent of the country's land is gem bearing. Around 75 varieties, including precious and semi-precious stones have been found in this land.

- The skilled manufacturing sector

Long tradition in various industry sectors with skilled and competitive manufacturing sector is an asset for the global competitiveness. Sri Lanka possesses a strong and rich manufacturing tradition for generations. One of the most important facts is that the traditional experts are still preserved as an asset for the gem and jewellery industry. Country's natural resource has been converted into exploitable adornments since the ancient times by local craftsmen. The industry which used to operate on a cottage system now includes small, medium and large-size enterprises and incorporates a variety

of production techniques which range from producing purely hand-crafted jewellery pieces to machine-manufactured products.

- Competitive wage rates for skilled and semi-skilled workers.

Providing competitive wage rates is an advantage within the region to obtain foreign orders.

- Improved environment for the tourist market

With the improvement of the security situation in the country, tourism is expecting a big boost. It gives the opportunity to elevate the revenue of tourist market sector of the Gem and jewellery industry. According to the available statistics, a tourist visiting Sri Lanka spends on average about \$45 for buying a gem & jewellery product. Focusing the gem studded jewellery itself will result the gain of premium revenue from this segment.

- Business friendly government

The government has established a reasonably "open" commercial scenario for the free flow of goods in and out of Sri Lanka. Progressive legislation manipulates within the industry over the past twenty years has been offering favorable terms and conditions for exporters. The proximity to the world's largest gem and jewellery trading countries facilitates to strengthen the gem and jewellery exports sector in Sri Lanka.

Further, Ekanayake and Abeysinghe (2010) stated that have possession of high quality and high value blue sapphires, is a competitive advantage to seize niche markets for high end jewellery products. The reputed Ceylon Blue Sapphires are supreme above all by quality and the quantity among other countries. Blue sapphires have

the ability to differentiate itself for high-end market users by being 'fashionable' and 'branded', ultimately competing with rival products such as diamonds, other-coloured gems, synthetics, and treated gems.

The report of the KPMG and Indian Export Promotion Council (2006) stated that the global gem and jewellery industry is estimated at US\$ 146 billion in terms of retail prices in 2005 and has the potential to grow to US\$ 280 billion by 2015. India and China are emerging centers of jewellery consumption and have increased their share to 8.3% and 8.9% of global market sales, respectively. Thus, the emerging big markets of China, India and the increasing global jewellery consumption are bringing hopes to maximize the jewellery exports.

It was evident the industry possesses an enormous potential for further development. The industry has not triggered enough even though several implementations were applied to restructure it.

The ratio between gems exports vs. jewellery exports remains stagnant constantly (refer figure 3).

Thus, a need had arisen to explore the factors hindering the successful routine of the industrial value chain. The next section explains the adopted research method to explore the scenario.

3. Research Method

An extensive literature review and several in-depth interviews were carried out with industrial experts and responsible bodies from both government and private sector to explore the factual situation behind this scenario comprehensively. The expert sample was consisted of seven experts from the said segments. The interviews were consisted of unstructured questions and were administered in face-to-face interviews with the chosen sample.

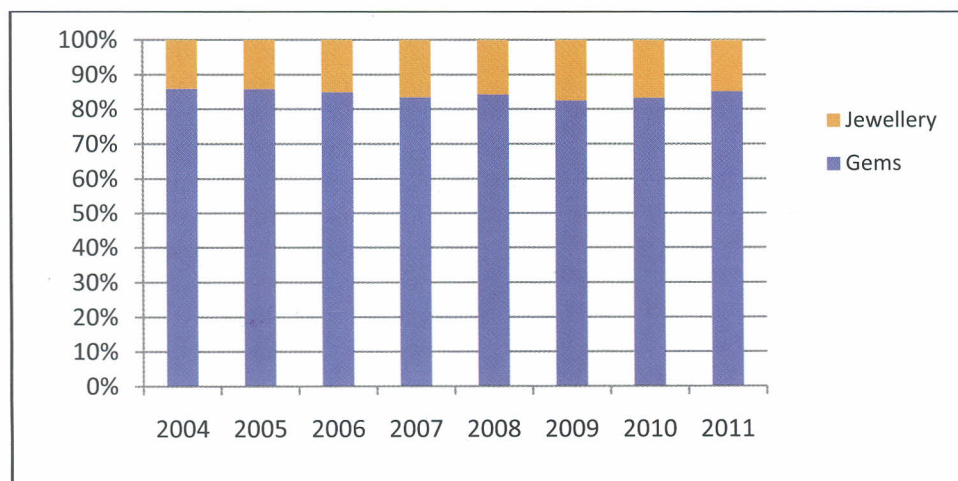


Figure 3: Proportion of the exports of gems vs. jewellery
Source: National Gem and Jewellery Authority

4. Results and Discussion

Through the research process, several vital points could be identified which is accountable for the said observation. The findings confirmed that the vast discrepancy between the gem exports as opposed to jewellery exports is a current issue and it negatively affect the competitiveness of the gem and jewellery industry in Sri Lanka. Six key factors emerged as the major findings of the research namely; lack of innovation, lack of finance, lack of technology, lack of market, lack of competent man power, and lack of integration & long term plans which affects the low competency in the industrial value chain. Those reasons have an impact on lack of gem studded jewellery production and exports which makes the majority of cut & polished gems export without converting them into gem studded jewellery.

Summary of the factors identified by the respondents are given in Table 1.

Table 1: Factors identified by the expert sample

According to the above table the respondents have identified six factors and these factors are discussed in the subsequent sections.

4.1 Lack of innovation

In today's intensely competitive business climate, innovation plays a major and massive role to sustain the competitiveness. The data revealed that the innovation factor is based on the design of jewellery product and all the respondents had pointed out innovation is a lacking factor which hinders the gem set jewellery production and exports. A responsible body (R3) from the private sector argued that *"we should have to sell more jewellery than gems because that gives more opportunity for value addition. But, Sri Lanka lacks the design capabilities.*

Another industrial expert (R2) affirmed that *"lack of innovation is a major problem within the jewellery industry. People do not consider the consumer preferences when design for the international market"*. The relationship between business growth and innovation is widely understood today and a number of consultants and business scholars have researched on the topic (Christensen, 1997; Foster, 1986; Leifer, 2000; Utterback, 1994). Innovation is one of the main sources of competitive advantage and is essential for company's growth. On the other hand, the competitive advantage of a company strongly depends on its possibility to benefit from innovational activities. Zakić *et al.* (2008) explain that the companies put great effort to face the market competition by introducing innovations.

4.2 Lack of finance

Financial barriers were also identified as a key constraint hampering the industrial competitiveness. A respondent (R5) from the industry asserted that *"lack of financial resources affects for lacking the application of new technology and seeking out new market opportunities"*. Financial resources and sufficient quality of investment opportunities is a critical factor for the entrepreneurial success. Public Consultation on the effectiveness of innovation support in Europe (2011) found that lack of access to finance is viewed by enterprises as the main factor hampering innovation activities and lack of access to finance is considered by institutional stakeholders as the principal barrier hampering enterprises bringing innovations to the market (Shortage of financial resources, 2011, p.38). Gathered data revealed that this factor is also affects negatively for the development of Sri Lankan gem and jewellery industry.

4.3 Lack of technology

It was evident that the Sri Lankan gem and jewellery industry suffers from lack of novel technology applications and it directly affects to lower the competency in the global arena. An expert (R7) from the industry stated that *“lack of technology is another issue hindering the industrial potential”*. The interview data revealed that a number of sub matters including lack of financial resources, lack of knowledge and skill, negative attitudes of the people incorporated with the issue.

4.4 Lack of market

Penetrate and sustain in the international market is a complicated and a devoted task. A numerous concerns have to be answered and faced to deal with the international market.

The export sector of Sri Lankan gem and jewellery industry suffers due to lack of market. One respondent (R2) from the industry asserted *“lack of knowledge on international market structure is mainly affect for the said problem. It is important to be aware on global marketing analysis, surveys and prospects, export documentation, foreign currency management and legal aspects to have a clear idea about the target market”*. Moreover, he mentioned that *“proper identification of the target market is essential to grab the business firmly. Excellent knowledge on consumer preferences, current global trends and the external competitors will create a big stage to success in the global market arena”*. It was found out that the low quality of the final product also affects for lacking the market.

4.5 Lack of competent man power

According to the gathered data, lack of skilled and qualified man power in manufacturing and the training sector badly affect the competitiveness in the Sri Lankan gem and jewellery industry.

With a low population an inherent factor of this country, it is extremely difficult to compete with the global mass production sector. China and India have the opportunity of high population and well fit to the global mass production sector. Thus the most suitable market will be the niche sector for Sri Lankan gem and jewellery industry. An interviewee (R2) from the industry asserted *“we cannot compete with China or India with mass production but, there is a good opportunity for niche markets”*. Low wages paid to craftsmen is sited as another factor for lack of competent man power. Wages in the manufacturing sector are not comparatively attractive and the best workers go offshore for a better salary and standard of living (A competitiveness strategy for Sri Lanka's jewellery industry', 2002). Lack of new skilled workforce is another problem occurs due to negative attitudes. There is a traditional industry passing through generation to generation and new members possess a negative and indistinctive attitude to continue the task.

4.6 Lack of integration and long term plans

The isolation and consequent disjointed functioning has permitted external influences to drive industry behavior. Industry participants are isolated and uncooperative so buyers must undertake tedious searches for goods or continue buying from larger offshore centers. Local stakeholders do not have a long-term vision or industry plan to attract investment necessary for becoming a global competitor similar to Bangkok and Hong Kong (A competitiveness strategy for Sri Lanka's jewellery industry', 2002). A large number of small companies are scattered at different points along the supply chain of the jewellery industry in Sri Lanka. There should be a continuous flow of precious stones in many shapes, sizes and cuts which is a

must to cater to high-end market of the world. Lack of trust and deprived behaviors badly affect the lack of integration and long term plans. A respondent from the industry (R1) said, *“the gem dealers want to get quick turnaround and try to sell stones to the local manufacturers with higher margins. This has led the manufacturing sector to seek offshore sources for buying the required gems for their products”*. The result is wasting of domestic resources. The report of the World Trade Organization (1995) has explicated that the chain of the gem and jewellery industry in Sri Lanka is weakly integrated with a fragmented supply base. Most of the stones processed are imported rather than sourced domestically, partly because of the reduction and then elimination of import tariffs on uncut gemstones in the 1990s. The WTO notes that there are considerable opportunities for greater domestic sourcing of the industry (as cited in Macfarlane, Tallontire, and Martin, 2003). Another respondent from the government sector (R4) stated *“for an instance, people seek quick turnaround by selling genda in bulks instead of value addition. Annually Sri Lanka exports about 1500 kilograms of rough genda gems, which is about 80% of heat treatable gems produced in this country”*. It was evident that these stones are heat-treated and small stones are calibrated particularly in Bangkok creating a vast quantity of stones for the jewellery industry. Although the technology of heat treatment is known locally, people find easy methods to make money.

5. Conclusions & Recommendations

The gem and jewellery industry of Sri Lanka possess a big opportunity to elevate its exports revenue with greater profitability. But, great potential remains untapped. Large quantities of gemstones make their way to other countries without setting in jewellery.

During the recent past, countries in the region such as Thailand, Hong Kong, Singapore, and India have performed well in the global jewellery industry and have moved far ahead of Sri Lanka. Thailand and India have made special efforts to develop their industry while they do not have the same broad resource base for natural gemstones as Sri Lanka does.

The competitiveness of the Sri Lankan gem and jewellery industry is lagging behind due to numerous factors. The gem and jewellery industry is an amalgamation of a number of fields and numerous external facilitators involve for the export procedure. Thus, the dearth of intellectual capacity and the support from the responsible bodies keep the gem and jewellery industry sluggish. Six major shortcomings such as innovation, technology, market, competent man power, financial resources and integration & long term plans have been identified. However, most of the factors are interrelated and the total impact affects the development and the competitiveness of the industry severely.

To attain the premium value for the Sri Lankan gemstones, the final step of the industrial value chain (finished gem studded jewellery), should be encouraged and developed locally. Activities along the value chain should be integrated and the proficient knowledge should be effectively transferred and implemented. The positive government policy, business affable environment, the industrial goals and the increasing global jewellery consumption, altogether provide an optimistic platform to attain the premium value by developing the jewellery industry in Sri Lanka. Following international quality standards, identifying consumer preferences, alert with global trends and marketing surveys, innovative

designs, market innovation, application of new technology, application of high quality craftsmanship and the effective integration of industrial value chain will help to achieve the industrial goals efficiently and effectively. Identifying the competitive advantages of the industry and filling the gaps by effective transferring of tacit and codified knowledge will make the success and the goals would be attainable.

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