

THE DECLINE OF GEM CUTTERS IN SRI LANKA



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Sri Lanka is one of the main sources of the most valuable gemstones in the world. Sri Lankan Sapphires are famous among international gem and jewelry traders. No other country has produced Sapphires to match the size, quantity and quality and thereby Sri Lanka stands as the unchallenged capital of Blue Sapphire in the world. The gem cutters craftsmanship has contributed immensely to the good name as one of the leading destinations for precious coloured gemstones. The industry is a perfect example to the long history and culture of the country and the artisan culture that is still in practice up to date proves the richness of the gem mining and faceting industry. Lapidaries of Sri Lanka follow traditional and modern methods of gem cutting techniques to enhance the quality of the stone with the minimum weight loss. The western world may see these traditional methods as outdated methods of faceting but the expertise of these cutters comes through centuries of traditional knowledge and experience passed down from generations to orient the rough gemstone to a best face-up colour and maximum weight. Through all the cutting steps the achievement is to display the best colour through the table with the valuable rough where weight retention is foremost. For high quality Sapphires the locals prefer this traditional method especially at the pre-forming stage. A gemstone's true value and beauty comes through the faceting of the specimen that generates a compelling scintillation.

Sri Lanka has and always will be an attractive destination of gem cutters due to the high skill and expertise we obtain through many decades of knowledge gathered. Although very few researches cover the existing factors associated with gem cutters, a noticeable adequate number of studies were carried out to understand the factors and challenges affecting the trade and the growth of business. As a nation rich with this marvelous resource Sri Lanka is believed to be a promising destination for the gem trade and the professional cutters. It is highly effective if the factors influencing the decline of professional gem cutters are identified and eliminated and potential for growth opportunities are identified and addressed. This will further facilitate the gem cutters to make sound decisions in progressing with their profession and a window of opportunity will be opened for the new entrants to the industry.

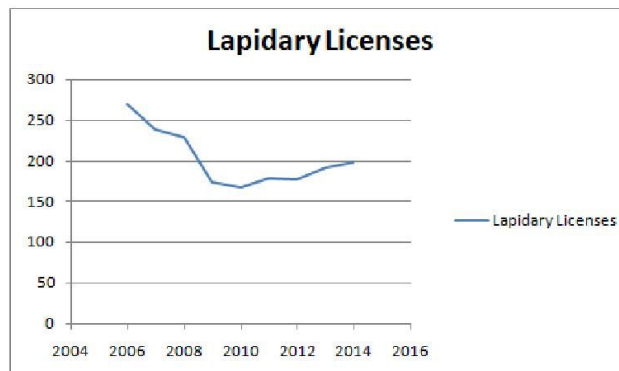
In agreement to the practical study carried out, very less amount to almost none of researches have been conducted to highlight the gem cutters profession or the problems they face in the trade in Sri Lanka. As per the facts and figures issued by the National Gem and Jewellery Authority a decrease in the gem lapidary license obtained points out that there is a drawback of gem cutters involving in the trade. Research documents and trade experts have highlighted the importance of investigating the specific factors influencing the decrease of gem cutters.

Issue of licenses.

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Gemming Licenses	4,734	5,021	4,204	3,970	4,061	4,687	5,956	6,565	5,928
Gem Dealers Licenses	3,718	4,637	4,794	3,996	4,195	4,422	4,382	4,429	4,714
Lapidary Licenses	270	239	229	174	168	179	177	192	199
Gem Auction Licenses	298	428	300	217	262	277	364	624	578
Total Licenses	9,020	10,325	9,527	8,357	8,686	9,565	10,879	11,810	11,419

Source - Annual Report of Gem and Jewellery Authority, 2011/2014.

Issued Lapidary licenses



As an academic purpose a research was carried in Ratnapura district of Sri Lanka to study and address the above mentioned concerns. The study on understanding the factors that are affecting the decline in the number of gem cutters in the gem lapidary industry is significant as it is the main base for gem exports, jewellery manufacture purposes and jewellery exports. After the mining process the cutting is the most essential part before focusing on other areas. Therefore a drop in gem trading, jewelry manufactures or import or export market directly affects the gem cutting market and the cutters. Very limited number of researches and documentations are performed related to this subject, freezes the range of understanding the capacity to overcome the challenges in searching for the factors that are affecting this decline. In this trade there are instances of first hand impact on economic cycles and sudden drops in the business due to external and internal legal and political scenarios. The well-organized high end lapidaries use business strategies and reserve plans and formulate in the local and international exhibitions. Times of uncertainty such as the political and other scenarios in the country also push the cutters to opt out of the cutting business and find easier ways of revenue such as gem trading or being intermediates. Some customers may want to stay with companies who have a brand name in the trade thus giving the small lapidaries less markets opportunities.

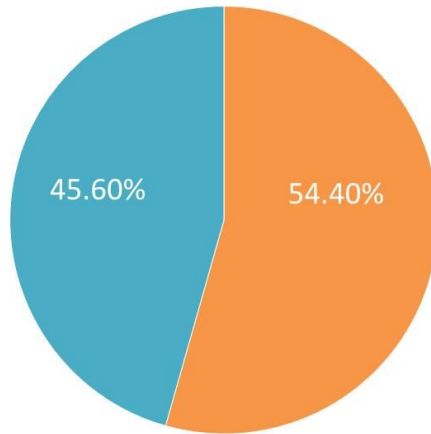
The study attempted to uncover the factors that are affecting the decline in the number of gem cutters in the gem lapidary industry of Sri Lanka. Almost no researchers' have attempted to analyze the factors as to why there is a decline in professional gem cutters in the Sri Lankan gem and jewellery industry. Independent and dependent variable were identified beneficially for this study to construct the conceptual framework. Decline in the number of gem cutters are identified as the dependent variable while health conditions, skill development, technology adoption and competition are identified as the independent variables from the literature review that was conducted mainly based on foreign literature.

Data collected when concluding the questionnaire survey was put in order to characterize the relationship in-between the demographic factors and the research study.

GENDER ANALYSIS

Count Of Genders

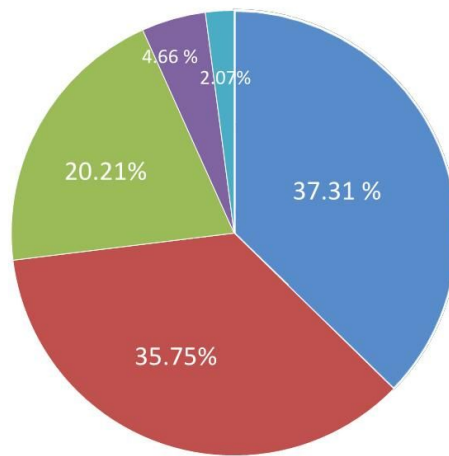
Male Female



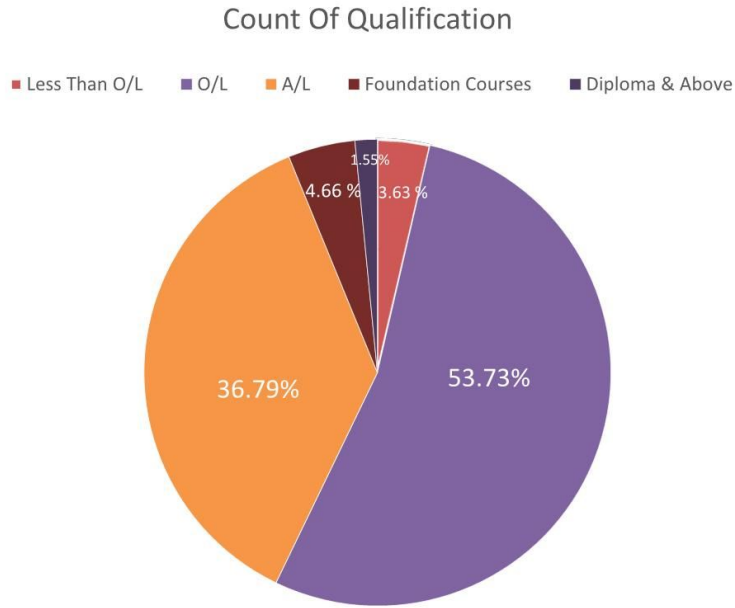
AGE ANALYSIS

Count Of Age

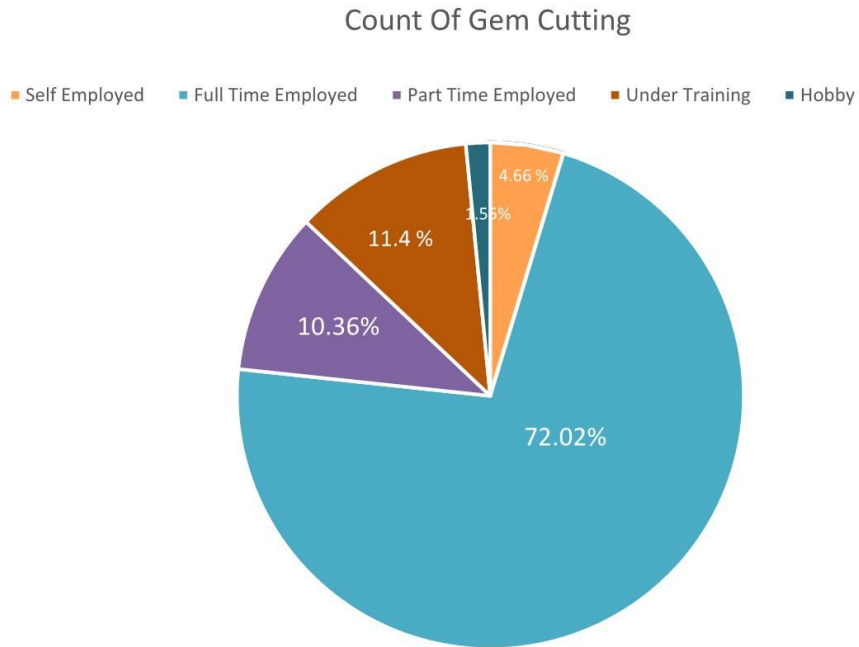
Under 25 26 - 35 36 - 45 46 - 55 Above 56



QUALIFICATION ANALYSIS

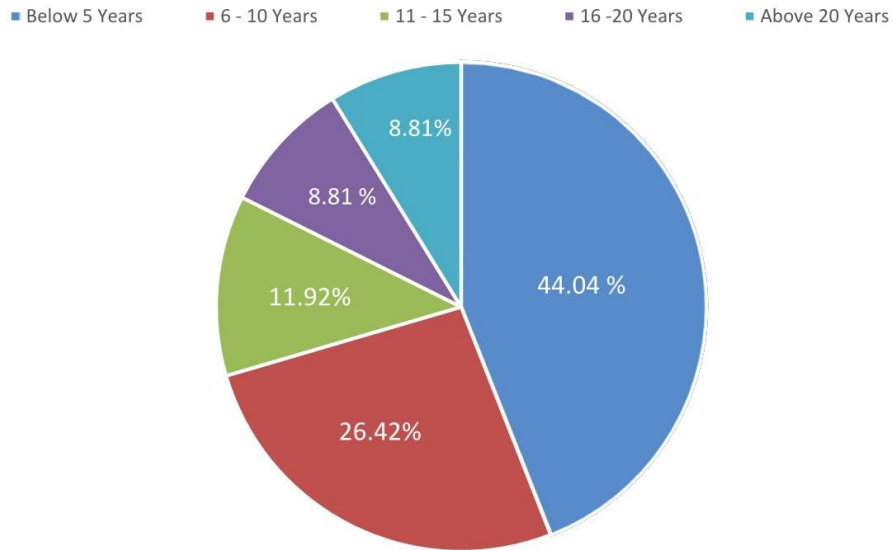


GEM CUTTING ANALYSIS



EXPERIENCE ANALYSIS

Count Of Experience



Hypothesis	H#	Alternative Hypothesis H#a	Null Hypothesis H#o	Relationship	Pearson Correlation (R value)
Health conditions influences the decline of gem cutters	H1	Accepted	Rejected	Positive weak relationship	R = 0.235**
Skill development influences the decline of gem cutters	H2	Accepted	Rejected	Positive strong relationship	R = 0.625**
Technology adoption influences the decline of gem cutters	H3	Accepted	Rejected	Positive weak relationship	R = 0.290**
Competition influences the decline of gem cutters	H4	Accepted	Rejected	Positive strong relationship	R = 0.792**

Source: Survey Data 2019

As per the study it is confirmed that the relationship between the health conditions and the decline in the number of gem cutters is significant and positive weak. Eye irritations and vision difficulties are obvious with a 30.1% and spine pains are being apparently recorded as 33.2%, thereby it is evident that mainly these two concerns exist. As a recommendation for the vision problems the gem cutters could be guided to annually check their vision and to use eye protection lenses to prevent the dust going to the eyes and the use of cooling lenses can reduce the strain given to the eye when working with high focus for a long period of time. The spine difficulties can be reduced by working on vertical machines other than horizontal machines as recommended by many trade experts. In general it is recommended to always wear a respirator if possible with disposable cartridges and dust filters and should always avoid cheap dust masks. An open window or air conditioner does not provide sufficient ventilation for the lapidary workplace. The simplest solution is to work outside, but it is not always possible thereby a exhaust ventilation system could help. Never dry sweep the workshop it will airborne and migrate the stone dust elsewhere, use a vacuum cleaner or use of a wet mop or wet rag with a water bucket can may be of assist.

According to the study it is confirmed that the relationship between the skill development and the decline in the number of gem cutters is significant and positive strong. The awareness of new developments of cutting industry around the globe are less recognized as it shows 32.1% level of disagree and being directed into new training programs and workshops show weakness as it is disagreed again by 32.1% thereby it is obvious that mainly these two concerns exist. It is also the responsibility of the government and the authorities' to intervene and stable industry by giving it more recognition, so that it will aid these gem cutters to develop their workplaces and lapidaries through financial aids in form of bank loans and so on. They also could organize workshops and conferences to educate these gem cutters of the latest methods and new developments so that they may always be updated. The introduction to the industry and the training provided to some gem cutters are in a disappointed level. Though it is less there is a 12.9% and 15.1% who are not happy and 12.4% feels that the experience and skill gained is not sufficient to retain in the industry. There is a huge chance in these gem cutters moving into other industries due to lack of satisfaction in the training provided. Therefore it is very important to develop the skill of these gem cutters and the best way to do is by trainings and workshops. Sri Lanka is rich with well qualified and expert gem cutters, but there is a lack of using this collected knowledge to give others.

Refereed to the study it is confirmed that the relationship between the technology adoption and the decline in the number of gem cutters is significant and positive weak. The awareness of robotics and AI driven precision cutting are less recognized as it shows 65.3% level of disagree and adopting into the advance technology, the traditional methods amalgamating with the new technology, preciseness and volume of the new technology compared to traditionally produced, and the future of the new technology intruding the lapidary industry is being disagreed between 19 to 24% and 57% feels threatened with the intervention of AI and robotics into the lapidary industry. This issue is mainly due to Sri Lanka being so used to the traditional methods and the restrain to adapt to the most modern and recent technologies. In this phase the intervene of government funded project, international investments and other high end investors are greatly mandatory to bring in these technologies to Sri Lanka and with the technology should come the sophisticated trainings. This might be in some extend a threat to the small scale gem cutters, but also they could accomplish by joining into the work force of these projects. Larger scale projects will provide more jobs and a range of professions.

In relation to the study it is confirmed that the relationship between the competition and the decline in the number of gem cutters is significant and positive strong. A 79.8% and 78.7%

feels that there is a possibility of producing the quality and quantity required by the international market but they also agree in majority that the political and economical situation affects the orders received from international customers and that the countries' procedures and regulations affect the overall exportation of the finished goods and profit margins. They also agree that there is a drop in the number of orders dispatched for fashioning (Gem cutting) in the recent past. Therefore the international investments and government interventions are crucial to compete with the international competitors. Thus a few recommendations where the government can intercede is by developing skills and technology even where a tradition of gemstone cutting and polishing already exists, improving labour productivity, securing reliable supply of gemstones for the lapidaries and lending credit and financial services and support to help compete with other competitors and big players.

As any empirical study this too experienced a number of limitations such as bias, and high rates of non-respondents, face to face interviews are the most successful method however time and resource utilization is a limitation. Thus, it would be advantageous for the research model to be assessed using a larger sample and covering a few main gem based cities than just limiting to one. Very little research has been conducted in the gem lapidary industry or of gem cutters with a focus on factors influences the decline of such industry is a relatively unexplored research area in Sri Lanka. There are many more factors that could be looked into and researched. Moreover, future studies may investigate emerging economies such as China, as one of the world's largest manufacturing countries, and compare the findings there with those for the developed economies.

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