

Impact Of Globalization And Liberalization On Jewellery Artisans: A Diagnostic Study

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ABSTRACT

Artisan dependent jewellery business in India has an unbroken heritage of over 5,000 years and remained a traditional art work. Jewellery making - goldsmithery was a hereditary profession in India, which has been mainly practiced by a particular community called the 'Vishwakarma' community. Until recently, only the traditional goldsmiths of the Hindu Vishwakarma Community were engaged in gold jewellery making at their house-cum workshop. Today, this sector has attracted workers from other industries due to competitive advantage/ high rate of return on investment. Due to this, traditional jewellery artisans, who had made a significant contribution to the growth of art and culture of jewellery making, are now facing the problems of underemployment, unemployment, low earnings and an uncertain future. Small family goldsmith units are dwindling. Notwithstanding this, there are about 5000 artisans in the Mangalore region with a high level of skills in the area of traditional jewellery designing that can cater to a niche market where they have a competitive advantage over the corporates and large manufacturers. Assisting these artisans to apply their unique skills to tap the potential market through a cluster approach may lead to considerable economic benefits directly for the goldsmiths and spill over benefits for entrepreneurs on the supply side. In this context, a diagnostic study of the Gold Jewellery Cluster in Mangalore was carried out to assess the impact of globalization and liberalization on the jewellery artisans in Mangalore. The study reveals that the goldsmiths are facing the problems of (1) Lack of technical expertise (2) Excessive dependence on the traders for marketing (3) No access to formal training (4) Limited access to Institutional Finance (5) Absence of a common facility centre.

Keywords : Gold Jewellery , Cluster Development, Jewellery Artisans, Vishwakarma Community

INTRODUCTION

Artisan dependent jewellery business in India has an unbroken heritage of over 5,000 years and remained a traditional art work. Gold jewellery is a mark of the rich Indian culture and heritage, and has its own place in the history of our country. Jewellery making, goldsmithery was a hereditary profession in India, which has been mainly practiced by a particular community called 'Vishwakarma'. The art, culture, and the sense of creation that percolated down to generations is responsible for imbibing the heritage in the art of jewellery making and strengthening the industry that illumines now.

Goldsmiths in the Mangalore cluster had a monopoly in the market until 1990. They had the privilege of being family jewellers just like family doctors. However, after 1990, due to liberalized trade practices, technological advancement and change in trade practices, people from almost all communities started entering this business. Low entry barriers, and high rate of return on investment attracted a large number of corporates into the market. This enabled the customers to have more choices and options for purchasing jewellery. At the same time, the preferences of the customers also underwent a vast change and branded jewellery became popular in the market. The goldsmiths in Mangalore, with their traditional method of ornament designing and manufacturing could not face the competition. In spite of their excellent skills in designing jewellery, day by day, they lost their market. The goldsmiths today face the problem of underemployment, unemployment, low earnings and an uncertain future. Small family goldsmith units are dwindling. Assisting them in applying their unique skill to tap the potential market through the cluster approach may lead to considerable economic benefits directly for the goldsmiths and spill over benefits for entrepreneurs on the supply side.

There is a great responsibility on the present generation artisans, irrespective of cast and creed to preserve the rich art and culture of jewellery making and to pass on this traditional art of jewellery making to the next generations. So, developmental efforts should be undertaken for the revival of this rich art, which could otherwise diminish and be extinct over a period of time. The Dakshina Kannada, Zilla Chinnada Khelasaragara Sangha (R) Mangalore, which was formed for the betterment of jewellery artisans of undivided D. K. District is playing a major role in this regard. In this context, MSME Development Institute, in association with Dakshina Kannada, Zilla Chinnada Khelasaragara

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Sangha (R) Mangalore has initiated steps to develop gold jewellery clusters in Mangalore. In this context, the present diagnostic study of gold jewellery clusters at Mangalore was undertaken to assess the impact of globalization and liberalization policy on jewellery artisans and to suggest measures to improve the socio – economic status of jewellery artisans.

MANGALORE GOLD JEWELLERY CLUSTER : OVERALL DIAGNOSIS

❖ **Methodology :** This diagnostic study of Jewellery Cluster in Mangalore is based on the information collected from the interactions and deliberations with the key stakeholders in the cluster, i.e. artisans, entrepreneurs, trade associations and the institutions supporting the cluster. Data/information for the study was also collected through informal interviews with some enlightened and experienced entrepreneurs who had a very long standing in the jewellery business. The study was conducted during July 2010 – March 2011. The main objectives of the diagnostic study are:

- a) To understand the functional dynamics of the cluster ;
- b) To analyze the nature and strength of the current stakeholders of the cluster and ;
- c) To identify the areas of strategic interventions required for the development of the cluster.

The study, in general, provides an insightful view of the cluster business process linkages, problems faced and perceived at both policy and entrepreneurial levels and especially deals with the potential areas for growth of the gold jewellery cluster at Mangalore.

❖ **Brief History of Mangalore Jewellery Cluster With Turning Point:** Mangalore city of Dakshina Kannada District in Karnataka had a monopoly in the art of gold ornament making, having a rich tradition and history. The design skills and artisanship of artisans from South Canara district had a great demand in the market. The goldsmiths of this area are well recognized in both national and international markets. This cluster is a historic entity based on its rich tradition. Craftsmanship of jewellery designing in Mangalore cluster is hereditary and is mainly practiced by the 'Vishwarkarma' community of the Hindu society. Artisans from 'Daivajna' community are also involved in this profession. However, when compared with the Vishwakarma community, artisans from the Daivajna community, numerically and historically, are not very significant. Chronological changes in gold jewellery manufacturing industry located in the Mangalore cluster are presented in the Table 1.

Before 60s	Dominance of Viswakarma community based units.
Late 60s	Ban of gold movements and breakdown of the dominance of the Viswakarma community based units.
Late 70s	Intrusion of other communities into this business.
Early 80s	Traditional industry changed into job workers' industry; where in, unemployed youths from other communities joined this industry.
Early 90s	New trade policy favoured the entry of big corporates.
2000	Entry of big corporate traders into the business.
2010 onwards	Dominance of big corporates in the jewellery market.
Source : Author's Research	

Goldsmiths in Mangalore had a monopoly in the jewellery business until 1990. They had a major market share in Mangalore. However, after 1990, branded jewellery become very popular and large corporations including MNCs entered the retail marketing of jewellery in a big way in Mangalore. At the same time, the preference of customers also underwent a vast change. The goldsmiths in Mangalore, with their traditional method of ornament designing and manufacturing, could not face the stiff competition. Further, jewellery artisans from West Bengal migrated to Mangalore and started competing with the local jewellery artisans. Due to all these factors, day by day, goldsmiths from the Vishwarkarma community began losing their market, in spite of their excellent skills, sincerity and honesty in their profession. The goldsmiths today face the problems of underemployment, unemployment, low earnings and

an uncertain future. Small family goldsmith units are dwindling. Assisting them in applying their unique skills to tap a potential market through the cluster approach may lead to considerable economic benefits for the goldsmiths.

❖ **Location And Size Of The Cluster :** The Mangalore jewellery cluster is located in Mangalore city, administrative headquarter of the Dakshina Kananada District in Karnataka. A rough estimate says that there are nearly 5000 artisan families in and around Mangalore. They have their own community temple (Kalikamba-Vinayaka Temple) at Car Street, Mangalore. Near this temple, around 250 jewellery units are clustered and within the 10 km radius of this temple, around 1,200 jewellery-manufacturing units are clustered. Most of these units are micro units, with one-man show or small units with less than 10 workers. Further, most of the units are considered as marginal units undertaking job works.

The jewellery-manufacturing units can be categorized into 4 types. The typologies of units in Mangalore jewellery cluster are presented in the following Table 2.

S.No.	No. Of Artisans	No. Of Units	Percentage
1	1 - 5	960	80.00
2	6 - 10	207	17.25
3	11 - 25	25	2.08
4	26 - 50	08	0.67
	Total	1,200	100.00
Source : Primary Data			

From the Table 2, it is evident that 80 percent of the units had less than 5 workers and hardly 2 per cent of the units had more than 10 workers. The average investment of the units ranged from ₹ 5 lakhs – 15 lakhs.

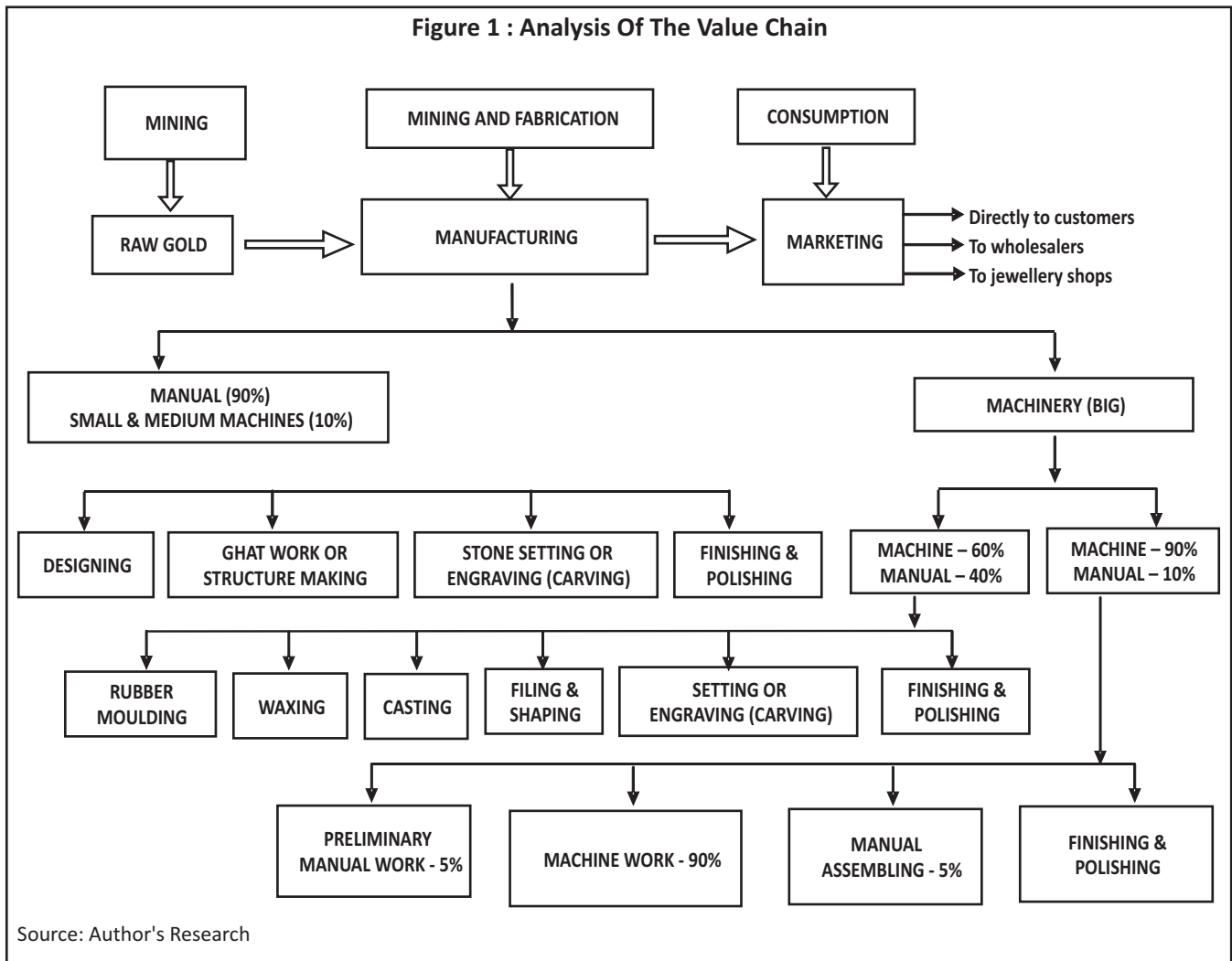
❖ **Industrial Association:** Dakshina Kannada Zilla Chinnada Kelasagarara Sangha (DKZCKS) is playing a major role in the development of the jewellery cluster in Mangalore. DKZCKS is a registered association formed for the betterment of the goldsmiths. Government of India promulgated the Gold Control Act during the late 1960s. The Act put a lot of restrictions on jewellery manufacturing, and the skilled artisans started migrating to other professions. Therefore, it became inevitable to arrest the migration and to educate the artisans to remain in the profession. In this context, 20-25 artisans formed the Association of Jewellery Artisans. The membership of this association recently increased to 1900 members, of which, around 1000 members are permanent members. The association took a proactive role in solving the issues of the cluster. The association formed a consortium of 24 registered micro units in 2007 to carry out further activities for the benefit of the cluster. The main objective of this consortium is to provide a platform for close interaction among jewellery artisans, entrepreneurs and developmental agencies for promoting the jewellery business for mutual and collective learning.

❖ **Major Products Produced By The Cluster:** The major items of gold ornaments produced in the Mangalore jewellery cluster are : **(1)**Mangalsutra; **(2)** Chains and necklaces ; **(3)** Bangles- bracelets, armlets, watch straps ; **(4)** Waist belts ; **(5)** Finger Rings ; **(6)** Ear and Nose studs ; **(7)** Spectacle frames ; **(8)** Temple ornaments etc.

The annual turnover of the cluster was estimated at around ₹155 crores. The presence of women workers in this cluster was minimum. The average income of an artisan in the cluster was ₹ 500/- per day. However, these artisans were not getting regular employment due to stiff competition from the established market players.

ANALYSIS OF THE BUSINESS OPERATIONS

The analysis of the business operations, including value chain analysis and production, is presented in the following section. The analysis was done on the basis of the information collected by administering a structured questionnaire to the cluster actors in the Mangalore jewellery cluster. Stratified random sampling method was used to collect the data from the entrepreneurs. It was noticed that most of the entrepreneurs were working in an identical environment. Therefore, the presentation of the analysis has been generalized.



❖ **Analysis of The Value Chain:** The analysis of the value chain in the Mangalore jewellery cluster is presented in the Figure 1. In the manufacturing process, most of the processes are carried out manually, with a limited use of machines. Small machines are used in the process and they are not harmful for the environment.

❖ The Production Process

a) Raw Materials : Gold, silver, copper and jems are raw materials used for jewellery manufacturing. Gold in its purest form is known as *aparanji*, which is mixed with copper for manufacturing jewellery as it is difficult to work upon pure gold on account of its high malleability. The alloying hardens gold and renders it workable. The purity of gold used, mainly in the Mangalore jewellery cluster, is 91.6 per cent (22 carat) and 87.5 percent (21 carat). Bullion or 24 carat (99.9 per cent) gold is mixed with copper, silver or mixing alloy proportionately for making ornaments.

b) Designing : A good design is crucial and significant in the process of jewellery making as it forms the basis for making ornaments. Errors in the jewellery's design are very costly, both in terms of labour and tooling costs. Most good designers are craftsmen jewellers, who understand the materials and their limitations, and appreciate the functional problems. Traditionally skilled goldsmiths used to design jewellery by employing craft skills and simple hand tools, and even today, worldwide, much jewellery design is still made manually with limited use of machines. Increasingly, however, new mass production methods are being adopted incorporating precision engineering techniques like CAD (Computer-Aided Design) and lasers capable of producing high-quality jewellery, that is indistinguishable from a traditionally handmade piece.

c) Manufacturing : There are three basic methods of making jewellery, which are : **(i) Handmade ; (ii) Machine made ; (iii) mixture of both hand and machine.**

❖ **Traditional Methods Of Jewellery Manufacturing (Handmade) :** By the traditional method, around 90 percent of the manufacturing process is done manually and 10 per cent is done with the help of machines like wire & plate drawing machines, drilling machines and cutting machines, etc. In this method, the process of jewellery making involves five separate stages- designing the jewellery, making a structure of the ornaments, stone setting or engraving, finishing and polishing. All these processes are done by hand, with supporting machines and tools. The tools used are the traditional smiths' hammers, drills, punches, gravels and files and a heat source, a blowtorch.

❖ **Modern Production Methods (Machine Production) :** By this method, around 90 percent of the manufacturing process is done with the help of machines and 10 per cent is done manually. The basic method of mechanized production is done for making components with individual steel dies, which are manufactured for each component of an individual item of jewellery. As die manufacturing is an expensive operation, it is cost-effective only where high numbers of the same item are being produced. Once the individual components are made, they are fitted on jigs for the final assembly process, which can be completed by semi-skilled operators. In high end/high volume operations, complex 'progression' die sets are used, in which a strip of work-in-progress passes in stages through a single die and emerges in the final shape.

❖ **Mixed Method :** In this method, both mechanical and manual processes are used to manufacture jewellery ornaments. This method of jewellery manufacturing is very popular in the Mangalore jewellery cluster. Once a piece of ornament is made up, by whatever method, it is passed to a finisher for smoothing and polishing and finally, if required, to a setter to complete the gem setting. Jewellers do not restrict themselves to one particular method, and depending on what is to be made, they will use, for maximum efficiency, any of the three methods in combination to achieve the desired quality within a given price range. Losses in manufacturing are inevitable and expensive and close checks must be kept on both metal and liquid materials and consumables. Typically, losses may be:

❖ Melting	1 %
❖ Sheet making/wire making	1%
❖ Drilling/cutting/markings	5%
❖ Engraving and stone setting	4%
❖ Burring & polishing	3%
❖ Sundry losses	1%

Total	15 %

These losses are not absolute and may be minimized by various processes used to recover, as closely as possible, every minute particle of scrap. A leather sheet is normally hung below the work bench to catch fragments produced by hand processing and even the floor of the processing shop is carefully swept, and all dust or particles are retained for re-processing.

❖ **Market:** The market for the entrepreneurs is restricted to Mangalore city. Many of them had their own jewellery shops. But a shop is not a showroom. This restricted their marketing scope as big showrooms and big players have entered into the market in a big way.

❖ **Finance :** The cluster members managed their business operations with their own funds or from the advance payment received from the customers. The cluster members had limited access to Institutional Finance.

❖ **Work Amenities :** The working amenities were poor. Most of them were still following the traditional methods, and had not adopted any modern methods of designing jewellery. The working environment was not hygienic.

❖ **Human Resources :** Most of the artisans were from traditional Viswakarma families. They did not have the mindset of a businessman. A change in the mindset was necessary for these artisans.

CORE PLAYERS IN THE MARKET - TYPOLOGIES

The core players in the cluster can be categorized as follows :

a) Category 1: Well-Established Manufacturers Cum Traders : Well-established manufacturers cum traders are on the top of the pyramid of the jewellery industry. Even though they are few in numbers, they occupy a major share in the jewellery market. They have well established production centers and a network of retail outlets. They deal in branded jewellery and enjoy the confidence of the customers. These traders procure orders from the customers and clients and place job orders to household jewellery artisans and first generation entrepreneurs who are in the third and fourth tier of the Jewellery industry. This category of players includes – **(a)** Corporate Enterprises ; **(b)** Family Owned Enterprises.

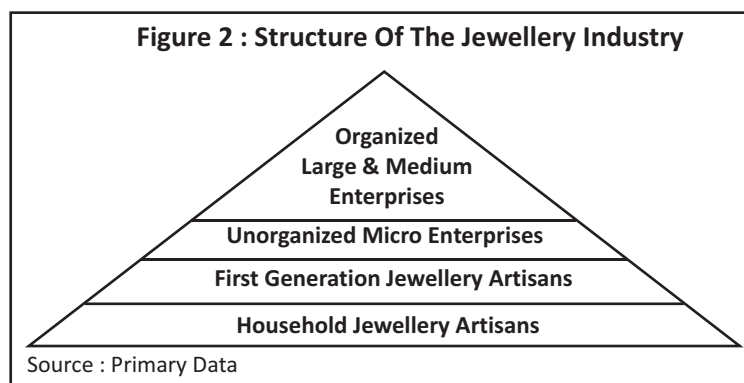
❖ Major corporate enterprises operating in Mangalore are: **(1)** Tanishq Joyallukas ; **(2)** Jos Allukas ; **(3)** Khazan Jewellers ; **(4)** Malabar Gold ; **(5)** Chemmanur Gold

❖ Major family owned enterprises are : **(1)** Canara Jewellers ; **(2)** Abharan Jewellers ; **(3)** S.L. Shet Jewellers ; **(4)** Gold Palace ; **(5)** Palke Jewellers ; **(6)** Laxmidas Jewellers ; **(7)** Mahalaxmi Jewellers

b) Category 2 : Micro Jewellery Enterprises Promoted By Skilled Artisans : Micro enterprises promoted by skilled artisans operate in the second level of the pyramid. They were traditional artisans with modern outlook and had their own production cum sales units. These artisans got orders from the customers as well as from wholesale jewelers. There were around 960 micro jewellery manufacturing units within the Mangalore cluster. They had limited production facility and were forced to restrict their products to a few product varieties. Their products were not branded and were sold only to the known customers in the local market. Most of these Micro enterprises were unorganized and were not registered as micro enterprises with DIC. Because of the intervention of MSMEDI, 24 units got registered and formed a Consortium. This Consortium has initiated steps for setting up a Jewellery Cluster at Mangalore.

c) Category 3: First Generation Jewellery Artisans : For a very long time, the Hindu Vishwakarma community was alone engaged in jewellery making. However, due to technological advancement and change in the trade practices, people from almost all communities entered this profession. Due to prosperity in the jewellery business, a large number of first-generation jewellery artisans emerged in the cluster. Majority of these artisans working in Mangalore were migrants from West Bengal. As these artisans were not registered, it was difficult to estimate the exact number of these types of artisans in the cluster. They undertook job work from large jewellery traders. The total number of this category of artisans in the cluster was around 500.

d) Category 4 : Household Jewellery Artisans : Household jewellery artisans were mainly engaged in job works and were operating from the bottom of the pyramid of the jewellery industry. These artisans depend upon wholesale traders and big retail outlets for their survival. Just like workers in beedi rolling industries, they only get the making charges. Unfortunately, these artisans used outdated technology for jewellery making and were facing severe economic hardships. As per the information available with the Artisans' Association, there were around 750 household artisans in the Mangalore cluster.



The present structure of jewellery industry in the Mangalore cluster is presented in the Figure 2.

❖ **Institutional Support:** Like in most industrialized districts/States, there were several support institutions, though not specific, for the clusters. A list of the same, including cluster-specific institutions, is presented below:

- a) Office of the Development Commissioner (MSME).
- b) Micro Small and Medium Enterprise Development Institute (MSMEDI): MSMEDI has a branch at Mangalore and is actively involved in developing MSME clusters. As a part of this programme, MSMEDI – Mangalore Branch initiated steps for the jewellery cluster at Mangalore.
- c) Department of Industries and Commerce, Government of Karnataka.
- d) Karnataka Council for Technological Upgradation (KCTU).
- e) District Industries Center (DIC).
- f) National Small Industries Corporation (NSIC).
- g) JSS Advanced Jewellery Design Technology Centre, Bangalore.
- h) The Gem & Jewellery Export Promotion Council (G&JEPC).
- i) Bureau of Indian Standards (BIS).
- j) The Indian Institute of Gems & Jewellery (IIGJ).
- k) National Institute of Fashion Technology (NIFT).
- l) Small Industries Development Bank of India (SIDBI).

Table 3: SWOT Analysis Of The Jewellery Cluster

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> ❖ Availability of supply-side inputs including human resources, equipments and raw materials. ❖ Design skills (traditional jewellery). ❖ Presence of a membership organization - Dakshina Kannada Zilla Chinnada Kelasagarara Sangha (DKZCKS) and a Consortium that was started in 2007. ❖ Ability to adapt equipments to suit the local requirements. ❖ Flexible operating practice. ❖ Wide local market for consumption. ❖ Price inelasticity of demand for gold jewellery. ❖ Premium mark-up is accepted in general by customers. 	<ul style="list-style-type: none"> ❖ Inability to keep abreast with modern trends in product design, fashion and technological development. Hence, not able to beat the competition. ❖ Lack of commercial orientation - the activity is being treated more as means of livelihood than as a business activity. ❖ Many artisans are not organized as legal entities leading to limited access to institutional support. ❖ Non-existence of local technical training facilities. <ul style="list-style-type: none"> ❖ 'Low skill inventory' among the artisans . ❖ High 'process losses' of precious raw material. ❖ Lack of testing and purification facilities . ❖ Practice of hallmarking products is low. <ul style="list-style-type: none"> ❖ Poor Marketing tie-ups. ❖ Low Product Diversification. ❖ Limited access to Institutional Finance.
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> ❖ Ready access to technology for product/process improvement. ❖ Tremendous enthusiasm on the part of the cluster actors for change. ❖ Brighter prospects of establishing Common Facility Centre. ❖ Possibility of developing a competitive edge through upgrading design (ethnic jewellery) and hallmarking. ❖ Growing domestic demand in India. ❖ Liberal Govt. Policies. 	<ul style="list-style-type: none"> ❖ Infrastructural bottlenecks - mainly availability of electricity. ❖ Constant price fluctuations in gold, irregular supply of quality raw materials. ❖ Over dependence on a single-channel supply chain. ❖ Dominance of few leading traders who have local sales outlets in most parts of the State.
Source : Author's Research	

The linkages of supporting institutions with the jewellery cluster were quite functional and the supporting institutions were engaged in fulfilling their duties. There was no developmental/proactive attitude of the supporting institutions towards the Industry. That's why the supporting institutions were not able to meet the expectations of the Jewellery Industry. A strong relationship and interlinkages among stakeholders cannot only solve the problems of the cluster, but it could also source technology, finance, marketing etc. for the overall growth and development of the cluster. It is ,therefore, important that the interlinkages among these stakeholders areis strengthened by organizing meetings and motivating them. This can be taken up as a capacity-building exercise for the cluster. The SWOT analysis of the cluster is presented in the Table 3.

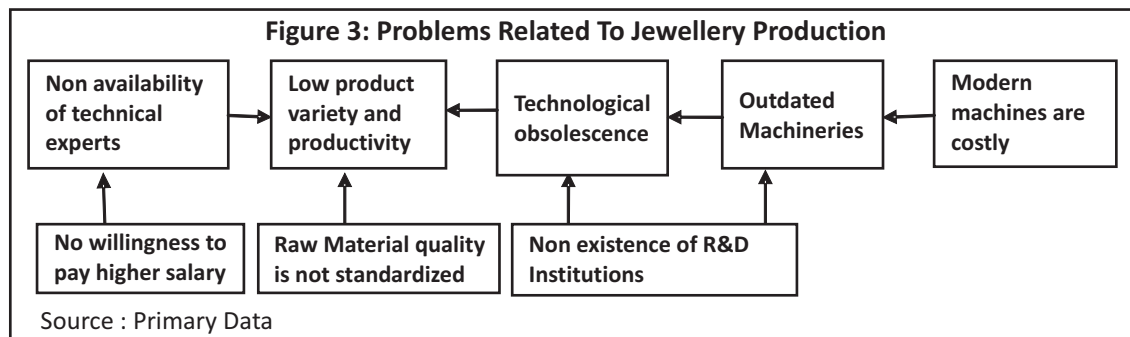
MAJOR CHALLENGES FACED BY THE CLUSTER

The challenges faced by the cluster players of the Jewellery Industry in Mangalore are:

- ❖ **Technology:** Obsolescence, lack of technical expertise, low productivity, lack of funding for technology improvement.
- ❖ **Marketing:** Limited or no efforts for product development, excessive dependence on traders, limited reach.
- ❖ **Entrepreneurial Abilities And Business Systems:** Knowledge gap, isolation.
- ❖ **Human Resources:** Limited or no access to formal technical training .
- ❖ **Finance:** Limited or no access to Institutional Finance impacting access to raw material and technology up-gradation.
- ❖ **Infrastructure:** Erratic power supply, absence of common facilities.

The details are as follows:

- ❖ **Technology:** The problems of the Mangalore Jewellery cluster related to technology are presented in the Figure 3.

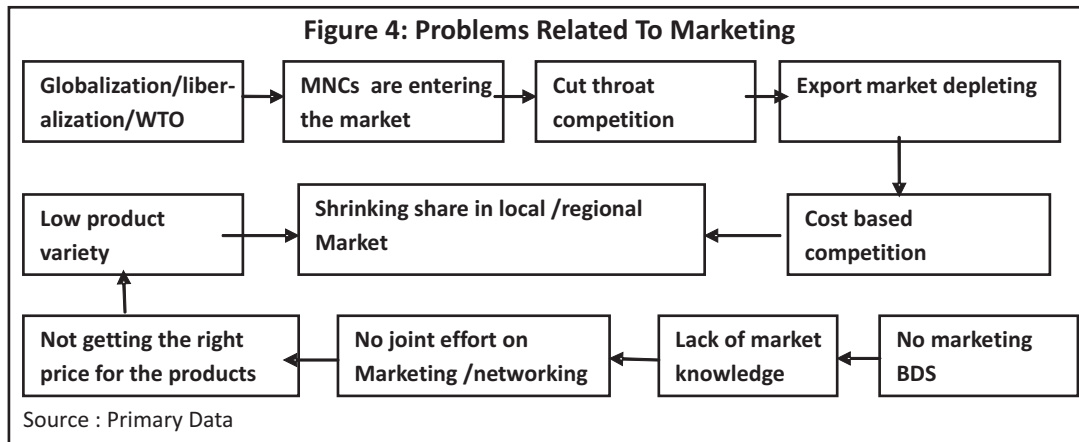


As depicted in the Figure 3, the major problems faced by the artisans in the Mangalore jewellery cluster are as follows:

- a) The technology used in jewellery manufacturing was crude and conventional. Most of the artisans were using outdated machineries and tools. Use of outdated machines resulted in technological obsolescence. This was mainly due to lack of awareness about availability of latest machines and tools and limited financial resources. Due to this problem, the productivity and product variety of the cluster members was very low.
- b) There were many artisans who had excellent jewellery designing skills. However, the designing was done manually. There was no support of R&D and no training facilities were provided in the cluster to augment the designing skills of the artisans. As there is a great demand for fashion jewellery with new designs in the present market, the artisans were not in a position to meet the expectations of the present customers.
- c) Most of the units did not have full production facilities. As a result, they were outsourcing some of the production processes and depended on facility providers at very high service charges.
- d) Most of the units were doing their activity on a job work basis either for direct customers or for jewellery shops. Therefore, the artisans were only paid the labour charges.

e) The household units and individual artisans procured raw materials along with the orders from wholesalers and showroom owners. Some customers paid the raw material price based upon the gold price prevalent on that day. This mechanism resulted in serious problems for the artisans due to the fluctuation in the gold prices.

❖ **Marketing** : The major problems of the cluster members related to Marketing are presented in the Figure 4.

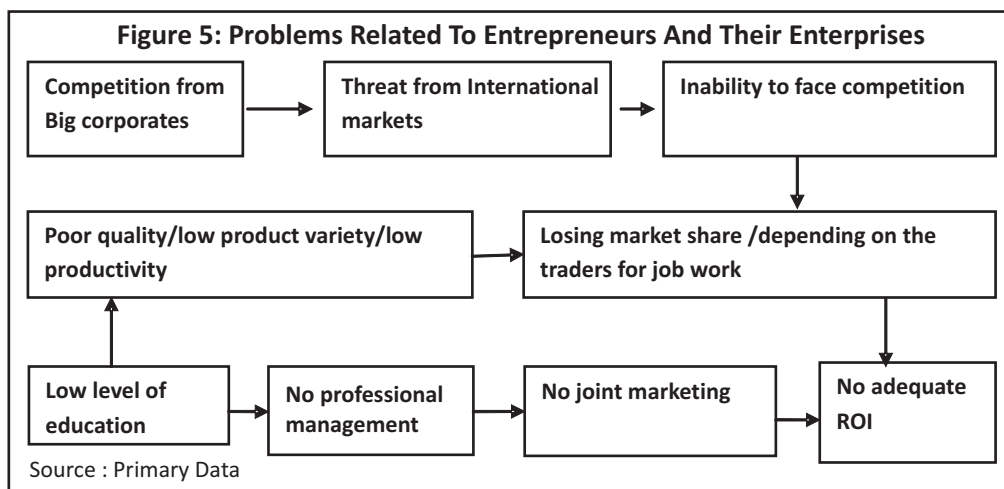


As presented in the Figure 4, the major marketing problems faced by the artisans in the Mangalore jewellery cluster are as follows:

a) Declining Market Share: Due to the intrusion of big showrooms, the market share of small artisans had reduced substantially. They could not withstand the competition on all fronts, viz. design, variety stock, etc. Most of the artisans were selling their products in the local market, i.e. Mangalore town only. Very few members had a market share in Dakshina Kannada District. Further, most of the artisans were not attending any exhibitions, seminars. Due to this, they were not aware about the latest trends in the market.

b) Absence Of Product Development Efforts: Many entrepreneurs in the cluster were still offering the traditional / standard varieties since decades without undertaking any product diversification. As they were not doing any market study, they failed to understand the changing needs and preferences of the customers. Therefore, they were not getting the right price for their products.

c) Lack Of Awareness: The artisans /entrepreneurs were still not aware of the Market Development Assistance schemes extended by the Govt. of India to promote the export business. Very few were availing the benefits of



“Market Access Initiatives” like establishing warehousing facilities, promoting the selected brands abroad, attending exhibitions, conducting the market survey.

❖ **Entrepreneurial Abilities And Business Systems:** The problems of entrepreneurs and their enterprises are presented in the Figure 5. As presented in the Figure 5, the major problems of the artisans in the Mangalore jewellery cluster are as follows :

a) Knowledge Gap: A majority of the enterprises in the cluster were family-owned and 'family-run'. The owner and other family members worked as the manager, operator, marketer, technician, negotiator, etc. There were hardly any qualified people recruited from outside. As a result, the knowledge capital was limited to individual experiences not substantiated by expertise that could be acquired from other sources. Thus, no fresh ideas were generated and the process of manufacturing remained traditional.

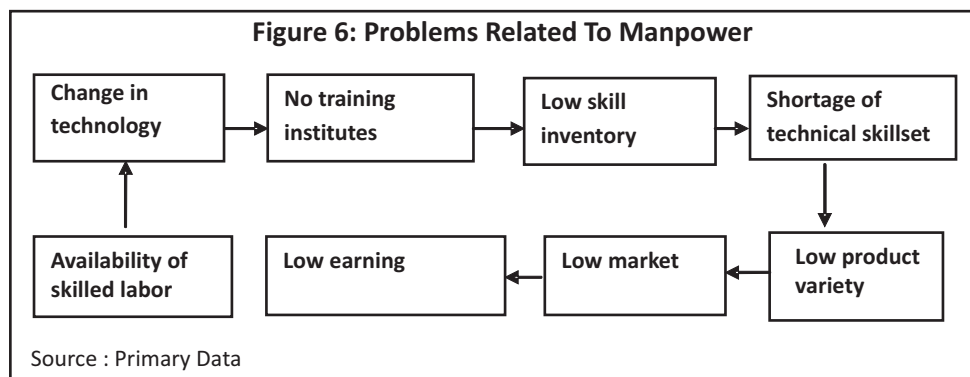
b) Lack of Business 'Systems': Given the low level of formal education, business skills in general and marketing skills in particular, were woefully inadequate to meet the competition. This in turn led to low level of Return on Investment (ROI). This further weakened the financial position of the entrepreneurs.

c) Isolation – Typical Issue Of Micro Ventures: Though there are industry associations, the artisans were not in a position to take full advantage in terms of initiating 'joint actions'. They continued to operate in isolation. They did not have any networking with developmental agencies and business development service providers.

❖ **Human Resources:** The following are the key manpower related issues (Refer to Figure 6):

a) Skill Gaps: As jewellery industry is highly labour intensive, artisans are the backbone of the industry. Availability of artisans with the right skillset is crucial for the success of the industry. In the Mangalore cluster, skilled artisans were available in plenty, but their skill inventory was very low. As micro enterprise owners do not have good manpower planning, they were facing the problems of non availability of skilled artisans during business seasons. Further, availability of technical support staff was very low in the cluster. This resulted in low innovation in product innovation.

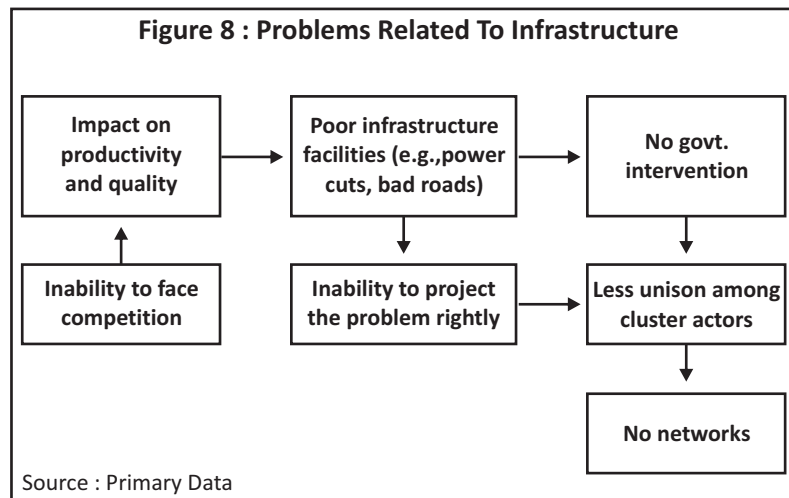
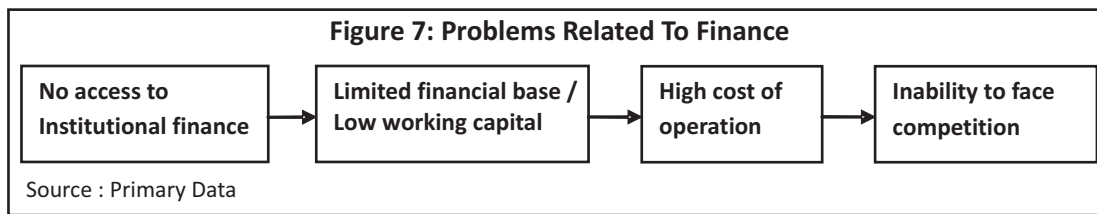
b) Lack of Training Infrastructure: There were no training facilities/institutions available in the cluster. The artisans learnt on-the-job and by observing others. The experience of working in one factory is utilized in another when the artisan switched his or her job. This low level skill inventory resulted in low earning for the artisans.



❖ **Finance:** The problems related to finance of cluster members are presented in the Figure 7.

The Jewellery industry, in recent times, has moved from being labour intensive to being capital intensive. Big traders have easy access to both long-term and short term finances. However, the capital base of the micro units has not changed over a period of time. This is basically because they are not considered as entrepreneurs. Micro and Small Enterprises have little access to sources of finance as they are not in a position to provide collateral security. Because

of low access to both long term and short term finances, they were facing serious problems of working capital.



❖ **Infrastructure** : Industrial infrastructure of the Mangalore jewellery cluster like energy, common facility services, marketing network, etc., were very poor. The problem of power cuts were very common. Due to frequent power cuts, production got affected seriously and artisans were not in a position to keep up their commitments made to customers. The artisans were not adequately networked to act as pressure groups / advocacy groups to interact with relevant service providers (Refer to Figure 8).

STRATEGIC INTERVENTION FOR THE DEVELOPMENT OF THE JEWELLERY CLUSTER

Keeping in view the SWOT analysis and reflecting upon the challenges faced by the cluster, the following are the proposed areas of intervention:

- i) Developing 'commercial orientation' among the artisans through 'performance improvement programmes' including exposure to best practices.
- ii) Market Development: Including Opportunity mapping, formation of a 'Marketing Consortium' and setting up of CFC for Testing and Hallmarking facility.
- iii) Design Innovation: Training and facilitation by experts.
- iv) Production process re-engineering including 'malady-remedy' analysis for controlling process losses.
- v) Setting up raw material banks with linkages to working capital (to be implemented through a SPV, given the high value).
- vi) Organizing artisans into 'Mangalore Gold Artifacts Producers' Consortium for improved access to developmental and cluster-specific interventions.
- vii) Institutional arrangements for business development services.

❖ **Developing 'Commercial Orientation' Among The Artisans :** The process of developing 'commercial orientation' among the artisans involves the following:

a) Organizing Performance Improvement Programmes (PIPs) : This is a time-tested training intervention (about 50 hours of inputs) to help small and micro enterprises put in place simple business systems and to strengthen entrepreneurial competencies that contribute to superior performance.

b) Exposure Visits: This involves giving an opportunity to the artisans to visit similar well-performing clusters elsewhere and interact with the artisans to understand 'best practices'.

❖ **Market Development :** Marketing is a strategic tool for business development and is critical to the growth and survival of small enterprises in today's intensive competitive market. In the Mangalore cluster, it was observed that the business is controlled by big players, who have their own big showrooms. Customers from far-off places visit the big showrooms for the design selection and placement of orders. The invasion of bigger players with sophisticated showrooms adversely affected the market of the traditional artisans. Due to the larger selection, the customers have now moved from artisans to big showrooms. In the present scenario, the entrepreneurs need to join together to form a brand-building initiative, where all the Mangalore products are projected under one brand name. The cluster shall develop a common brand, which will give confidence to small artisans. A common brand like '*Mangalore Gold*' will penetrate deeply into the other markets effectively. A common website for displaying unique ornaments prepared by the artisans with their detailed address and specifying different locations where the jewelers are known for a particular item has to be made available. This will go a long way in helping the needy artisans with valuable orders, both from within and outside the country. A monthly magazine in local language giving details of the market trends, technological developments, export potential of different items and certain related articles by the artisans themselves will be very useful in the long run. Further, since sales promotion is a big problem for the cluster members, it is suggested to have a common display centre in the cluster. This will help the small players to showcase their products in an effective manner.

❖ **Design Innovation:** In the Mangalore jewellery cluster, the artisans have excellent jewellery designing skills, but this designing is done manually. Designing manually is a problem because it requires a lot of time and energy for the artisans to convert their concept into a model. This results in major constraints for the cluster members to compete with other big players. Therefore, it is suggested to have a jewellery design centre with CAD/CAM facilities in the cluster to enhance the designing skills of the artisans. Further, it is suggested to conduct regular training programmes in computer-aided jewellery designing for the artisans to cope with the current market requirements. Further, the use of computer-aided design software helps the artisans to attain perfection in designing and manufacturing of the ornaments.

❖ **Production Process Re-engineering Including 'Process Loss Reduction':** The technology used in manufacturing of jewellery by artisans is still conventional. Nearly 90 percent of the manufacturing process was done manually and only 10 per cent of the process was done with the help of supporting machines. Majority of the artisans in the cluster did not have the supporting machines, and they depended on facility providers at very high charges. This system created serious problems like delay in making ornaments and high manufacturing cost. Another major challenge faced by the artisans in the cluster was the melting and purification of raw gold. Artisans were using the crude method of melting, which is time-consuming and causes a very high percentage of wastage.

❖ **Setting Up A Raw Material Bank :** The household units and individual artisans got small orders from customers for particular jewellery items with certain quality standards. Usually, the customers paid the price of the raw material along with the order based upon the gold price prevalent on that day. There were only two sources of getting raw materials in the market : **(a)** Commercial Banks **(b)** Local bullion traders. Big manufacturers buy raw materials in large quantity and get a discount of 2-4 per cent and enjoy the cost benefits in procuring raw materials. For the artisans, both these sources of buying the raw material are problematic. They bought gold in a small quantity of 10-20 grams and hence, could not avail a discount. Further, they bought the raw material of only 999.5 purity gold in the local market, whereas, the big traders bought the gold, the purity of which is 999.9, as it is only type of raw material available in the bank. Therefore, the artisans were not in a position to compete with big manufacturers both in terms of

cost and the quality of the ornaments.

❖ **Institutional Arrangement For 'Joint Actions':** The networking among cluster actors was quite limited. There are two major trade associations viz, Mangalore Jewellers Association and Dakshina Kannada Zilla Chinnada Kelasagarara Sangha (R). At present, the role of the Association is reactive and only when entrepreneurs faced pressing problems, they chose to interact in groups for solving the problems. A strong network has to be created among the cluster actors so that they can jointly solve each others' problems. They can jointly market their products in the global market in order to compete with 'economies-of-scale' approach of Chinese manufacturers. While such associations are to be strengthened as a part of the interventions, it is important to make 'focused' efforts to promote 'joint actions' among the producers at the 'bottom of the pyramid' – the artisans. Further, interventions taking place as a part of the Cluster Development Programme (CDP) need to be sustained. This is possible once the governance of the initiatives is transferred from the CDP implementing agency to the core actors.

❖ **Developing BDS Providers:** As of now, there are no locally based business development services focusing on artisans in the cluster. The reasons are obvious, given the limited activity level of individual artisans as also affordability. Even after the proposed interventions, the situation will not be much different, though there will be enhanced levels of dynamism in the cluster as a whole. Thus, it is necessary to formulate a strategy that provides continuous and affordable access to BDS. Two areas of BDS to focus upon are marketing and technology, specifically the design aspect. While the CDP provides for related interventions, an on-going arrangement even after the conclusion of the CDP is called for.

EXPECTED OUTCOME OF THE CLUSTER DEVELOPMENT PROJECT

While inducing dynamism in the cluster, the expected outcomes of the Cluster Development Project (CDP) based on the proposed interventions are as under:

❖ **Improvement In The Performance Of The Artisans:** About 450 artisans are to be trained under the Performance Improvement Programme (PIP). This is expected to lead to improved management practices. Based on experiences, this translates into about 20% increase in profitability of 450 artisanal units.

❖ **Improved Market Share:** Initiatives such as new product/market exploration, formation of a Marketing Consortium and the proposed CFC for designing & hallmarking, coupled with the 'spill over' effect is expected to increase the market share of the cluster as a whole by about 10 to 15 % over the current one. The proposed initiatives to develop BDS providers shall contribute further in this direction.

❖ **Cost Reduction:** It is proposed to offer technical training to about 100 artisans focusing on the use of improved manufacturing practices. This is expected to lead to cost reduction to the tune of 5 to 8 % based on the current rate of process loss. In addition, setting up of a raw material bank is expected to lead to further cost reduction to the tune of about 2 to 3 %.

❖ **Employment:** Being an artisanal cluster, there is limited wage employment, the family members themselves being engaged in the production process. In cases where non-family members were employed, the numbers per unit were in single digits. Thus, it is difficult to assess the possible impact of the interventions on employment levels. However, it is estimated that the cluster development initiative may provide employment to around 5,000 artisans in the cluster. Further interventions such as technical training, process improvement and cost reduction are expected to have a spillover effect by way of increased income by around ₹ 3000 pm .

❖ **Sustainability:** The key aspect of any cluster development initiative is to sustain the tempo of interventions and to enhance the level of joint actions even after the conclusion of the project. It is expected that these will continue once the proposed 'Mangalore Gold Artifacts Producers Consortium' is in place. Apart from carrying further the proposed initiatives, the Consortium is expected to facilitate better access to institutional mechanism mainly by way of acting as a platform to offer 'mutual credit guarantee'.

CONCLUSION

The advent of the era of globalization and liberalization accompanied by the information technology revolution has transformed the world around us. This has made possible the free flow of people, technology and goods across the globe; business activities are no more limited and confined to the geographical boundaries of the countries (Bahuguna & Kumari , 2010). In the Indian jewellery market, the entry of international brands from countries like China, Indonesia, Italy, Germany, Singapore, Hong Kong and Dubai compelled the domestic producers to switch over to modern means of production. Hence, the prevalent concept that this profession should have a family background was felt unnecessary.

The advent of several training institutions imparting knowledge in design and development of varieties and styles of ornaments has made it possible for creating scope for setting up small production units by new-generation entrepreneurs who do not belong to traditional goldsmith families. As discussed in the present study, the goldsmiths in the Mangalore jewellery cluster were facing the problems of underemployment, unemployment, low earnings and an uncertain future. Small family goldsmith units are dwindling. Notwithstanding this, there are about 5000 goldsmith families possessing a high level of skill in the area of traditional jewellery designing, and they can cater to a niche market, where they have a competitive advantage over the corporates and large manufacturers. Assisting them in applying their unique skills to tap a potential market through the cluster approach would lead to considerable economic benefits directly for the goldsmiths and spill over benefits for entrepreneurs on the supply side. The developmental efforts undertaken by MSME Development Institute and the trade associations may lead to revival of the traditional art forms of jewellery designing, which may otherwise diminish and become extinct over a period of time.

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