



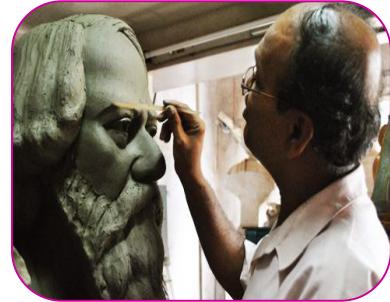
A STUDY OF PRODUCTION PROCESS IN CLAY DOLL OF GHURNI IN WEST BENGAL

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ABSTRACT

Handicraft sector occupies a prime position in the Indian economy for its high employment prospective, low investment at a time, eco friendly products and its' unbelievable creative talents to develop tradition to modern culture. This work was traditionally done by rural artisans, they reflected their hope, aspiration, and their life style through their clay dolls, the brilliant mix of colours which is admired all over the world. Ghurni, a neighborhood of Krishnanagar city represent a 250 yrs old art world class clay dolls. It was said that initially it was grown and flourished by Raja Krishna Chandra. Krishnanagar clay dolls are unique in their realism and the quality of their finish. So artisans of Ghurni had a very old and strong cultural heritage. This mechanism is done by a specific caste named "Kumvakar", a large number of people belonging to this caste live in the villages and very efficiently conducting this age old heritage craft. But it is very unfortunate that this traditional industry is under threat of extinction. Therefore the main aim of this paper is to discuss total production process and labour process details and at the same time highlighting the different markets and income pattern of the artisans.



KEY WORD: Ghurni, Clay dolls, Production Process, Labour Process, market structure.

INTRODUCTION

Handicraft is man's first technology, the technology of the hand. Craft is the skill of making an artifact using a specific material, skill, tools and technology. When hands are used over other tools, the crafts so produced become handicrafts. A handicraft at its finest represents man's need to create simultaneously with mind and hand. Handicrafts have therefore been existing in India since the prehistoric time when the skills of shaping the materials from the available materials were developed using the hand and others rudimentary supporting equipments.

India is one of the important suppliers of handicrafts to the world market. The Indian handicrafts industry is highly labour intensive cottage based industry and decentralized, being spread all over the country in rural and urban areas. Handicrafts are unique expressions of a particular culture or community through local craftsmanship and materials. It is no longer possible to look at traditional artisan communities and their products in isolation from global market trends and competition. Handicrafts are part of a much larger home accessory market, which includes handcrafted, semi handcrafted, and machine-made crafts. These artists struggle to combine the traditional with modern. The handicraft items are carefully made by artesian so that they retain the ethnic value, while they can be put to modern day uses. The designers have to keep in mind the changing needs of the consumers, especially the foreign markets. In tradition people basically use hand made products for their basic need in home accessory. Today the home accessory market is strongly influenced by fashion trends, consumer purchasing patterns, and economic conditions in end markets. In many cases, artisans are out of touch with those end markets, which presents a challenge to

those seeking to export their products. The response of consumers to some specific handicrafts is unpredictable.

IMPORTANCE OF HANDICRAFTS:

Handicraft sector occupies a prime position in the Indian economy for its high employment prospective, low investment at a time, eco friendly products and its' unbelievable creative talents to develop tradition to modern culture. Handicraft activity is predominantly carried out in the unorganized household sector. Handicraft artisans/ manufacturers are household members practicing handicrafts activity jointly at their residence, who if need arises employ other handicraft artisans for work. The handicrafts industry has over the years contributed significantly to the employment and foreign exchange of the country. It is the largest employer next to agriculture. It is omnipresent with each state contributing through one or more crafts and has made tremendous progress during the last decade.

METHODOLOGY

This study is based on primary data. West Bengal is purposively chosen. A large section of the industrial entrepreneurs are engaged in producing handicrafts items in West Bengal. A list of industrial units is prepared with the help of District Industrial Centres (DIC). We select one district specific handicraft industry, like Clay Doll in Nadia from the list of industrial units. A list of administrative blocks by types of industry is prepared in the same way. One block for this industry is purposively selected in stage two. Here we get the artisans of clay doll produce within a cluster in Ghurni Village at Krishnanagar. In this stage two sample 50 units of proprietor households are selected from village for detailed survey using stratified random sampling method. Tabular, statistical and econometric methods are used for analysis of data mostly using STATA software.

ABOUT GHURNI

Ghurni, a neighborhood of Krishnanagar city represent a 250 yrs old art world class clay dolls. It was said that initially it was grown and flourished by Raja Krishna Chandra. Krishnanagar clay dolls are unique in their realism and the quality of their finish. One of the unique feature of the handicrafts is that more often the same item of the handicraft, produced in different regions, are different from each other in terms of the craftsmanship, style, color combination and finish by artesian creativity. Potters making clay statuettes of Gods, Goddess and folk figures clad in traditional garb were famous from British period to modern era in India as well as in the world.

PRODUCTION PROCESS

There are many parts in this production process. In production process both skilled and unskilled artisans required to develop the work. These skilled and unskilled both work done by household artisans. Some time the household hired labour from their own cluster. The male artisans work more skilled oriented work rather than female. The senior skilled male persons of the family play as managerial part of the work so they arrange all raw materials from the markets and they decided from which market they will buy the raw materials, how many quantity will be produces, about hired labour and also output market . Most of the units purchase raw materials from the same local market of Krishnanagar. Most of the artisans do not have sufficient space for storage and those who have so, place them carelessly in open area or scattered together. Due to the effect of temperature, and mixture of polluting elements like plastic etc, which are not been taken care of the raw materials, especially clay, get contaminated by the external impurities which come with air, water, dust etc. It is a slow process which does not come to notice but there is always a high chance of it showing bad effect after firing. Because of the inconsistency in raw material, the outcome also gets affected. Due to this sometime a part or the whole lot of production has to be rejected.

Preparation of Clay and Moulding: This process starts with preparation of collected clay for modeling. At first, a moulder prepares the clay wet and processes it as it is to be desired and dump it for at least one night. There is an important issue which has been highlighted during the interaction with artisans was their earlier method of preparation clay. It was prepared with manual beating of clay with the sprinkle of water. This clay contains more plasticity, which can be helpful in reducing breakage and cracks. The old artisans recommend this method but because of its laborious nature they use the regular method of clay preparation. Next, an artisan gives shape of a specific model with the help of moulded clay. At first a wire structure is made on which the intended doll is given shape with clay. These dolls can be fully handmade or made with the help of moulds. The moulds are made of Dental Plaster for better strength and durability. In case of the moulding, the dolls are made of separate body parts, which are finally joined by the extended piece of wire from each of them. Finally the joints are covered with another thin layer of clay. Next important step is drying of the models. Totally depend on Sun for drying. Artisan faces problem during rainy and winter season for drying. Some of the units do not have cemented or solid floor space to place product. Once the clay dolls are fully dried, they are placed within a furnace. Here models are kept for 4-5 hours at 500C. After the firing, once the dolls are brought out of the 'Poan', they become ready for decoration. Breakage and cracks in articles- is happened due to unnecessary moisture content in the body or mishandling of the article at the time finishing or loading. Then, cotyledons of the seeds (white portion) are grinded and boiled in water. After boiling, the mixture is cooled and mixed with the colour. To increase glossiness in colour, a brushing treatment of arrowroot powder mixture is used on the colour coating. After that kerosene oil added to burnish is used to increase the brightness. But, now-a-days, the artisans mostly use readymade colours and glues available in the local market. In case of the human figures, dresses are made of cut pieces available from the local tailors or other waste clothes collected from various sources. These clothes are wrapped on and fixed with glue to the bare bodies of the dolls. Finally, hair is added to those human figures with painted jute or other similar fibre. Most of the units use colours available in the local market, which is not always up to the standard of international, even national, market so gradual degradation of the quality of painting. The painters are paid on piece bases. That's why they work with an intention to complete maximum number of pieces in a day and ignore the quality of artwork. Often the artisans are bored of reproducing the same content and form which gets reflected in their lack of involvement in the works they do. Because of low quality in painting buyer don't take it as value for money. Artisans are showing less sensitivity toward the colour combination and pattern making. Most of the units have the same colour palette. They usually depend on various resource people, exporters and clients for new subjects and designs. Most of the units follow the same designs and patterns. Now-a-days many of the clay doll artists are inclined towards works in glass fibre which may cause harm for the existence Ghurni clay doll patterns.

Packaging and Transportation: Glass box for the costlier items and plastic packet for the cheaper ones. In certain cases, dolls are also made in high relief, which are framed with wood and glass. In recent times, frames made of fibre are also being used. The finished products are sent to the destinations by various modes of transport like rickshaw, van rickshaw, matador, bus, train etc. They are even sent by air in case of orders from far away cities in India and abroad. Most of the units does not have approach directly to market. They deliver their products to local dealer and exporter. Use only Plastic and newspaper for wrapping and put them in corrugated box which are locally available. But some of them use thermocol and bubble sheet for inter-state or international delivery of their products.

LABOUR PROCESS

These handicraft products the most important work should be done by hand. These traditional handicrafts can be one which transmits the knowledge of its production technique and the secret of skill from one generation to other, especially by word of mouth, tale, belief and customs. Artisans has got prominent role in the production activity. The uniqueness of handicraft labour from other types of labour

lies in its aesthetic and artistic values. This labour also requires special skill, talent and taste. All the family members are engage in one production. But it is not possible that the all artisans have same and equal skill or the skill will divided equally in all the household members from one generation to others. For this reason the skilled base work divided among the household members. Like most traditional craftspeople, the claydoll artisans of Ghurni have no formal system of apprenticeship: craft training as such does not exist. The craft is, to coin a phrase, "learned by being". Children in Ghurni grow up in an environment where the claydoll craft is everywhere around them. Every spare corner of the village is taken up by drying moulds or artefacts in various stages of preparation, and the routine of the craft is part of the daily rhythm of the village. Small children soon learn to imitate their elders, playing with clay, making doll and eventually graduating to detailed colouring process. The fastest learners soon become useful additions to a family team. Indeed, 13 year-old boy, whose father is sick, supports his family by working as a wage-labourer for other artisans.

The artisans agree that it is difficult to make a living at all unless the family are fully engaged in the craft, and those with small families or who have no children are at a disadvantage. This militates against extended education. This is not to say that the artisans are completely uneducated. Most children manage to attend two or three years of schooling, whilst young women marrying into the village often have several years of elementary education. But the appeal of joining the adult world or work is very alluring and the social pressures to contribute are great.

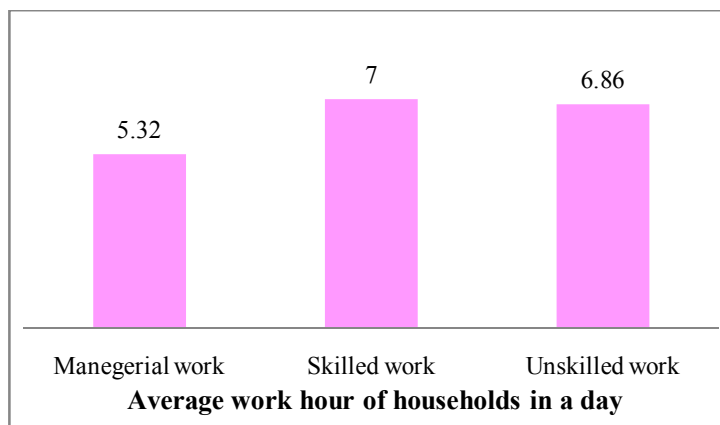
Table: 1
Family Member and Family Worker Distribution

Number of Family Member	Number of Family Worker						Total Household
	2	3	4	5	6	7	
2	7	0	0	0	0	0	7
3	3	8	0	0	0	0	11
4	0	5	6	0	0	0	11
5	0	1	4	3	0	0	8
6	0	0	0	7	2	0	9
7	0	0	0	1	0	1	2
8	0	0	0	0	0	2	2
Total Household	10	14	10	11	2	3	50

Corr 1%	Family Worker
Family Member	0.935***

From the table 1, it is clear that as family size increases, number of family workers also increases (correlation coefficient = 0.935***). Here in 27 household, all family members are working in the craft of making clay doll. As production requires good amount of involvement of family members, it is quite obvious. We have collected data from 50 households with family size 2 to 8. There are 21 families for whom all member except one are working. There is a high positive statistically significant correlation between number of family members and number of family workers.

Time Use Pattern



Let us check the usage of total hours available to work per family. As a household, people are using 5.32 hours for managerial work, 7 hours for skilled work and 6.86 hours for unskilled work. In managerial work the senior male family worker decided what types of products will be produce like birds, animals, human figure or other types? He also decided the quantity and quality (clay, fiber, concrete, etc) of the products. At the same time he decided the market from where they will buy their raw materials and want to sale their final products. In production process they also distributed different part of the work among family workers and hired workers. Number of hired worker and their wages also determined by him. In the family the worker involve in both skilled and unskilled work.

Unskilled artisans first a wire structure is made on which the intended doll is given shape with clay. These dolls can be fully handmade or made with the help of moulds. The dolls are made of separate body parts, which are finally joined by the extended piece of wire from each of them. Finally the joints are covered with another thin layer of clay by skilled artisans. The skilled artisans done the immediate step is coloring of the dolls which depends upon the aesthetic view of the artists, which is the most vital thing in giving the eyes and facial expressions of the models which makes it lifelike. Unique coloring pattern of Krishnanagar clay dolls deserves crown in the world of dolls.

Table: 2
Family: Male and Female Worker Distribution

Number of Family Male Worker	Number of Family Female Worker				Total Households
	1	2	3	4	
1	10	6	1	1	18
2	8	9	5	1	23
3	0	5	1	3	9
Total Household	18	20	7	5	50

Corr 1%	Family Female Worker
Family Male Worker	0.409***

In the discussion of production process, we need to look into the male-female ratio among the workers. From table 2 we can have a clear view. There are 25 families where male-female worker ratio is 1:1. There are 26 household where female workers are more than male counterpart. In 13 families male workers are outnumbered female. These figures are showing that this 'ghurni' production is more popular among female. The correlation coefficient between male and female workers is 0.409. It is a not very strong but statistically insignificant value. It is revealing the fact that male and female workers are having positive association.

Table: 3
Family Worker and Family Skilled Worker Distribution

Number of Family Worker	Number of Family Skilled Worker				Total Household
	1	2	3	4	
2	9	1	0	0	10
3	9	5	0	0	14
4	6	3	1	0	10
5	2	7	2	0	11
6	0	0	1	1	2
7	0	3	0	0	3
Total Household	26	19 (38)	4 (12)	1 (4)	50 (80)

Corr 1%	Family Skilled Worker
Family Worker	0.574***

Table 3 shows an interesting fact. When we check the proportion of 'skilled' to 'unskilled' workers, it is not at all 100%. Though no families are there for whom there is not a single skilled worker, but there are 26 families where number of skilled worker is 1. There are 19 families with 2 workers who are skilled. There is a single family for whom both the family workers are skilled. Four families are having 3 skilled workers and only one family has 4 skilled workers. Out of 190 family workers, 80 are skilled. The correlation coefficient between family worker and skilled worker is 0.574. It is a positive correlation, it is statistically significant too. It is revealing the fact that this people are inheriting the skill generation after generation.

Table: 4
Family Worker and Family Unskilled Worker Distribution

Number of Family Worker	Number of Family Unskilled Worker					Total HH
	1	2	3	4	5	
2	9	1	0	0	0	10
3	3	11	0	0	0	14
4	2	4	4	0	0	10
5	1	5	2	2	1	11
6	0	0	2	0	0	2

7	0	0	0	3	0	3
Total Household	15	21	8	5	1	50

Corr 1%	Family Unskilled Worker
Family Worker	0.736***

Table 4 is showing the other side of the picture. From table 3 we got the information that 80 workers are skilled. It means 80 workers in our total sample of 190 are unskilled. There are 2 families where all the workers are unskilled. Each household has at least one unskilled worker. Here also, the relationship between number of family worker and number of family unskilled worker is statistically significant. They have a strong positive correlation.

Table: 5
Family Worker and Hired Worker Distribution

Number of Family Worker	Number of Hired Worker					Total Household
	0	1	2	3-4	5-7	
2	4	0	5	1	0	10
3	5	4	3	1	1	14
4	5	3	0	2	0	10
5	7	2	1	1	0	11
6	2	0	0	0	0	2
7	0	0	0	1	2	3
Total Household	23	9	9	6	3	50

Corr 5%	Hired Worker
Family Worker	0.205

From table 5, we are getting some idea about the employment generation through this production procedure. It shows the number of hired worker and total family workers. It is obvious that as number of family worker increases, opportunity to hire workers from outside falls. Though, this fact is not clear from the correlation coefficient between number of family workers and number of hired workers. It is not statistically significant. There are 23 households who are not using any hired worker. Nine families are using single hired worker and another nine families are using two hired workers each. Three families are using 5 to 7 hired workers.

Table: 6
PCI of Family and Average Family and Hired Worker Distribution

Range of PCI of Family per Month (Rs)	Average PCI of Family per Month (Rs)	Total HH	Average HH Labour	Average HH Skilled Labour	Average HH Unskilled Labour	No. of HH who Hired Lab	Average Hr Labour	Average Hr Skilled Labour	Average Hr Unskilled Labour
2000-2500	2406	10	3.8	1.6	2.4	4	4.7	2	2.75
2501-3000	2790	16	4.37	1.9	2.37	6	2	1.16	.83
3001-3500	3161	11	4.09	1.36	2.36	7	2.1	1.4	.7
3501-4000	3795	9	3	1.44	1.5	7	1.8	1.4	.4
4001-4500	4261	4	2.5	1.25	1	3	2.3	1.3	1
Total Labour		50	190	80	106	27	66	39	27

The paper reveals that monthly PCI of the families engaged in 'ghurni' craft lies between Rs 2000 to Rs 4500. This distribution is positively skewed. Most of the families lie in the lower range of PCI. As the PCI of the family increases the average family labour decreases. The average unskilled family labour decreases sharply compare to skilled labour, which implies skilled labour have an important role for income earning. Sustainability and long run development of a sector depends on various factors. One of the most important factors is employment generation. Thus, it is very important to judge the factors behind number of hired workers. Here, an econometric model is formed as

Hired worker = $a_1 + a_2$ (family PCI) + a_3 (Household worker) + a_4 (HH male-female ratio) + a_5 (HH skilled-unskilled labour ratio) + a_6 (Raw material cost) + a_7 (Input market) + a_8 (Output market) + U_1 .

After using Tobit regression technique, following relationship has been found.

```
Tobit regression                                Number of obs   =           50
                                                LR chi2(6)      =          14.60
                                                Prob > chi2     =          0.0236
Log likelihood = -76.228671                    Pseudo R2       =          0.0874
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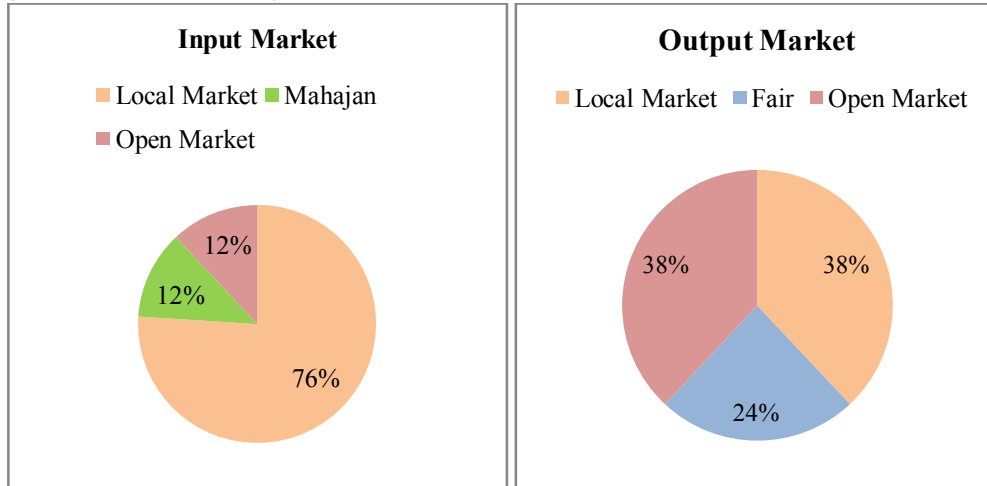
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-----+-----
hr_lab_all |          Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----+-----
hh_mem_lab |    .2275769    .5661883     0.40  0.690    - .9135006    1.368654
hhmale female|   -.4198888    .7978507    -0.53  0.601    -2.027851    1.188074
hh_sk_unsk | -2.848319    1.09137    -2.61 0.012    -5.04783    -.6488081
raw_met_cost |  -.0000617    .0000735    -0.84  0.406    -.0002098    .0000865
input_market | -1.804476    .9252924    -1.95 0.058    -3.66928    .0603288
output_market | -1.425826    .8452085    -1.69 0.099    -3.129232    .2775798
      _cons |    6.057273    2.334324     2.59  0.013    1.352751    10.76179
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Obs. summary:      23 left-censored observations at hr_lab_all<=0
                   27 uncensored observations
                   0 right-censored observations
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Regression revealed that Number of hired workers has statistically significant relationship with household skilled-unskilled worker ratio. It has an inverse relationship with this variable. It is quite obvious that as number of family skilled worker increases household should cut down the number of hired workers. Other independent variables are not significantly related.

Study of Input and Output Market Structures

To analyse a production system properly, we need to go through the input and output market structure. In earlier section we discussed about the most important factor of production, i.e. labour. But other than labour, the households require many of other inputs. Let us check their sources of those inputs. On the other hand, last stage of production process is to sell it. So to end the circle, they need the market where they can sell their finished product.



The above pie chart shows people prefer to buy the inputs from local market. Only 12% of the required inputs they buy from open market. On the other hand, they buy 76% from local market. The advantages of local market are many. It is easier to buy from known circumstances, from known seller. They can borrow while buying. There can be variety of buying option which can be changeable. Similarly, home delivery option is available in case of local market. Mahajan provides rest 12% of the required inputs.

The most important part of entire production process is to sell the products. To sell their product, households look for three options; local market, fair market and open market. The **fair market** is the place at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts. They sell 24% of their product in fair market, 38% in open market and 38% in local market.

	Input Market = Local			Input Market = Mahajan			Input Market = Open	
	Local	Fair	Open	Local	Fair	Open	Local	Open
Output Market =	Local	Fair	Open	Local	Fair	Open	Local	Open
Number of Household	16	9	13	2	3	1	1	5
Average Labour in each Household	3.43	3.88	3.76	2.5	2.3	3	5	6.2
Net Income of Family	11101	13518	13388	8607	8024	10589	15955	20265
PCI of Household Labour	3327	3520	3619	3527	3561	3529	3191	3341
PCI of All (HH+HR) Labour	3099	2833	2758	2629	2065	2872	3191	2531

The above table reveals the fact that households who are dealing in open market have larger scale of production. They have more labour, more income and more per capita income too. It is a kind of circular relationship. As these families have more income they can use more worker, they can buy improved inputs from open market. Therefore, their production is more and of better quality. As a result, they can sell their products to open market at a higher price. So their income is more. The circle starts rotating again. The families who are dealing with mahajans have lowest scale of production. They have lowest number of worker, lowest turnover. From above we can say that the artisans are thinking about their own expanding entrepreneur.

CONCLUSION

Handicraft sector occupies a prime position in the Indian economy for its high employment prospective, low investment at a time, eco friendly products and its' unbelievable creative talents to develop tradition to modern culture. It is the largest employer next to agriculture. It is omnipresent with each state contributing through one or more crafts and has made tremendous progress during the last decade. Krishnanagar clay dolls are unique in their realism and the quality of their finish. One of the unique feature of the handicrafts is that more often the same item of the handicraft, produced in different regions, are different from each other in terms of the craftsmanship, style, color combination and finish by artesian creativity. At first, a moulder prepares the clay wet and processes it as it is to be desired and dump it for at least one night. Next, an artisan gives shape of a specific model with the help of moulded clay. Once the clay dolls are fully dried, they are placed within a furnace. Most of the units use colours available in the local market, which is not always up to the standard of international, even national, market so gradual degradation of the quality of painting. The finished products are sent to the destinations by various modes of transport like rickshaw, van rickshaw, matador, bus, train etc. They are even sent by air in case of orders from far away cities in India and abroad. Most of the units does not have approach directly to market. They deliver their products to local dealer and exporter. All the family members are engage in one production. But it is not possible that the all artisans have same and equal skill or the skill will divided equally in all the household members from one generation to others. For this reason the skilled base work divided among the household members. Small numbers of family members hire more workers whereas large numbers of family did not hire worker. The artisans who sale their products in other markets rather than local mostly use hired labours for their work substituted.

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