

ECONOMICS OF KORAI MAT WEAVING IN THANJAVUR DISTRICT

A THESIS SUBMITTED

By

V. ETHIRAJAN

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C E R T I F I C A T E

This is to certify that the thesis 'Economics of Keral Mat Weaving in Thanjavur District' submitted by Mr. V. Kshirajan for the Degree of Doctor of Philosophy in Economics is a record of the original work done by him under my supervision and guidance.

Cochin - 682 022,

Date : 22. 4. 1982


DR. K.C. SUKARANAYANAN.

C E R T I F I C A T E

This is to certify that the thesis " Economics of Koral Mat Weaving in Thanjavur District" submitted by me for the Degree of Doctor of Philosophy in Economics is the original work done by me under the supervision of Dr. K. C. Sankaranarayanan, Professor and Head of the Department of Applied Economics, University of Cochin. I also certify that this thesis has not previously formed the basis for the award of any Degree, Diploma, Associateship, Fellowship or other similar title.

Cochin,

Date 12.2.4.82

V. Kithirajan
V. KITHIRAJAN.

P R E F A C E

This thesis on "Economics of Kerasi Mat Weaving in Thanjavur District" is the outcome of the continuous research work conducted by me for the last 3 years. It was the authorities of AVVM Sri Pushpam College, Poondi, who inspired me with the idea of doing original research work. Had it not been for their sustained encouragement and abundant good will, I would not have been able to embark on this ambitious programme. I, therefore, express my deep sense of obligation to the President, Secretary and Correspondent and other members of the Managing Committee of the Institution for their unfailing encouragement.

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CHAPTER - I

INTRODUCTION

Gandhiji once said that India lives in her villages. Even after three decades of planning, industrialisation and urbanisation, the relevance of Gandhiji's words has not changed. Even now more than 70 per cent of the population continues to live in villages. The growth of per capita national income during the last 10 years remained around 2 per cent per annum which is clearly inadequate to meet the needs of a developing economy. Unemployment has increased, rural-urban disparities have widened and the rate of real investment has stagnated. The growth of industrial output in the last decade has been no more than 3 to 4 per cent per annum on an average.

The emphasis of industrial policy so far has been mainly on large industries neglecting cottage industries completely and relegating small industries to minor role. But this realisation came only very late. But the 1977

Industrial Policy Statement presented to the Parliament by the then Industries Minister Mr. George Fernandez emphasised the "effective promotion of cottage and small industries widely dispersed in rural areas and small towns. The Policy Statement suggested the following specific measures to realise the objectives :

1) Whatever can be produced by small and cottage industries must only be so produced. The list of items reserved for exclusive manufacture in the small scale sector has been enlarged from 180 to 304.

2) Special legislation will be introduced to give due recognition and adequate protection to the self-employed in cottage and household industries.

3) Within the small scale sector, special emphasis will be given to units in the 'Tiny Sector'.

4) The focal point of development for small scale and cottage industries will be taken away from the big cities and state capitals to the district headquarters. The District Industrial Centres will provide all techno-economic inputs under one roof to entrepreneurs.

5) The marketing of goods of these sectors with its concomitant product standardisation, quality control, and marketing surveys will be given special attention.

6) Technical changes will be encouraged in the traditional industries as in the production of navikhadi.

7) The development and application of technology appropriate to our socio-economic conditions.

But the specific measures suggested for the effective promotion of cottage and small scale industries have not been implemented and consequently the condition of cottage and small scale industries continued to be rather poor.

Cottage industries have got enormous employment potential as they are labour intensive in nature. Many of these industrial units do not require sophisticated machinery. These industries by their very nature use locally available raw materials with locally available skill and manpower. They do not cause air or water pollution. But in spite of all these benefits, the village industries are not provided with adequate finance and no meaningful attempt is made to make them effective tools of rural transformation.

Korai mat weaving is an important village industry in Thanjavur District. Most of the landless people living in the villages take Korai mat weaving as a full-time occupation while others take it up as a part-time job to supplement their meagre income. Before stating the main purpose of the present study

we may note some features about Thanjavur District, the area covered in our study.

Thanjavur District is predominantly agricultural and it is one of the least urbanised districts in the State of Tamil Nadu. The district has an area of 9735 Sq. Kms. Total population of the district comes to more than 40 million. It has a large scheduled caste population (23.1%). The literacy rate also is very low (40%).

The District has six revenue divisions, namely, Thanjavur, Pattukkottai, Kumbakonam, Mayavaram, Mannargudi and Nagapattinam. Each division is under a Revenue Divisional Officer. Each division is sub-divided into Taluks and each Taluk into Blocks and each Block into Villages. There are twelve taluks, namely, Thanjavur, Orathanad, Papanasam, Kumbakonam, Mayuram, Sirkali, Nagapattinam, Nannilam, Mannargudi, Thiruthuraiipoondi, Pattukkottai and Arantangi. There are 36 Blocks or Panchayat Unions, nineteen in East Thanjavur Development District and 17 in West Thanjavur Development District. They are Kollidam, Sirkali, Sembanarkoil, Mayuram, Kuttaiam, Nagapattinam, Kivalur, Thiruvarur, Thirumarugal, Nannilam, Karadacheri, Kodevasal, Mannargudi, Kottur, Nidasengalam, Thiruthuraiipoondi, Thalainjayar, Muthupet, Vedaranyam (now in Pudukkottai District), Annampet, Valangaiman, Papanasam, Kumbakonam, Thirupandal, Thiruvideamaruthur, Thanjavur, Thiruvaiyaru,

**Budalur, Orathanad, Thiruvonam, Pattukkottai, Peruvurani,
Madukkur, Sethubavachatram, Arantangi and Avudayarkoil.**

Purpose of the Study

The main purpose of this study is to examine the economic aspects of the Korai mat weaving industry. This will help to throw some light on the economic condition of those who are engaged in this industry.

The specific objectives of the study are :

- 1) to evaluate the economics of Korai mat production
- 2) to assess the problems and prospects of Korai mat weaving industry, and to suggest solutions if possible.

Method of Study

This is an analytical as well as descriptive study. Though there are many taluks in Thanjavur district where Korai mat weaving is done, the study is confined to only 25 villages selected from 11 taluks. A total 400 persons in 154 families engaged in Korai mat weaving and 5 merchant middlemen were directly interviewed with a schedule. Out of the 400 persons, 29 persons are members of the Co-operative Korai Mat Weaving Societies and 42 persons were former members of Co-operative Societies. The 400 persons covered by our survey are classified into three groups, namely Harijans, Muslims and others.

Table - 1.1

Name of the Taluks	Name of the Villages	Harijans		Muslims		Others	
		No. of families	No. of persons	No. of families	No. of persons	No. of families	No. of persons
Papanasam	Arunthavapuram	7	16				
	Pullikkudi	8	18				
Pattukkottai	Sendangadu	12	31				
	Sembalur	3	7				
Orathanadu	Vandayarirruppu	7	18				
	Karaincendarkottai	7	18				
Thanjavur	Pallakkulam	8	20				
	Nadigai	9	20				
Nannilam	Kengalancherri			4	8	2	2
	Anaikuppam	2	3				
	Mappillaikuppam					2	7
Nannargudi	Pudukkottai (Vaduvur)	8	17				
	Thenpathi (Vaduvur)	7	22				
Thiruvaiyaru	Vaithinathappettai					7	29
	Villangudi	1	2			7	27
Mayaram	T.Pandaravadai					5	16
	Arayapuram					5	15
Nagapattinam	Ahalangan					9	34
	Manjakkollai			1	2		
	Paravecherri			2	2		
Sirkali	Sendangudi			8	24		
	Coleroon (Thaikkal)			8	22		
Thiruvarur	Kidarangonda					1	2
	Kodikkalpalayam			2	3	2	4
	Maruthapattinam			2	3	8	8

2. Size of the Family

Table 1.2 shows the number of males and females of the Korai mat weaving families.

Table - 1.2

Sl. No.	Villages	No. of Mat weavers family	No. of persons (Mat weavers)	Males	Fe- males	Chil- dren	Total
1.	Ahalangan	9	34	17	17	30	54
2.	Annaikuppen	2	3	2	1	5	8
3.	Araiyapuram	5	15	3	12	5	20
4.	Arundavapuram	7	16	8	8	16	32
5.	Coleroon - Thaikkal	8	22	11	11	34	36
6.	Karaimoondarkottai	7	18	10	8	15	33
7.	Kidarankondan	1	2	1	1	3	5
8.	Kodikalpalayan	4	7	3	4	6	13
9.	Kongalancherri	6	10	4	6	19	29
10.	Medigai	9	20	12	8	35	55
11.	Manjakollai	1	2	2	--	--	2
12.	Mappilaikuppen	2	7	4	3	6	13
13.	Maruthapattinam	5	11	6	5	12	23
14.	Pailakulam	8	20	13	7	10	30
15.	Pandaravadi - T	5	16	7	9	13	29
16.	Paravacherri	2	2	--	2	3	5
17.	Pudukottai (Vaduvur)	8	17	9	8	17	34
18.	Pullikrudi	8	18	9	9	27	45
19.	Sambalur	3	7	4	3	9	16
20.	Sendangadu	12	31	16	15	50	81
21.	Sendangudi	8	24	11	13	52	76
22.	Thenpathi (Vaduvur)	7	22	11	11	24	46
23.	Vandayar Irruppu	7	18	10	8	21	39
24.	Vaithinathampettai	7	29	17	12	36	63
25.	Villangudi	8	29	18	11	22	51
		154	400	208	192		

3) Particulars about the Profession : (a) Hereditary or Non-hereditary

Table 1.3 shows the hereditary or non-hereditary nature of Korai mat weaving population

Table - 1.3

Name of the Village	Hereditary		Non-hereditary		Males	Females
	Male	Female	Male	Female	%	%
1. Ahalangam	7	9	10	8	17	17
2. Annaikuppen	1	1	1	-	2	1
3. Araiyapurem	2	5	1	7	3	12
4. Arundavapuram	6	4	2	4	8	8
5. Coleroon - Thaikkal	6	3	5	8	11	11
6. Karaimendarkottai	5	4	5	4	10	8
7. Kidarankondan	1	-	-	1	1	1
8. Kodikkalpelayan	2	2	1	2	3	4
9. Kongalancherri	3	3	1	3	4	6
10. Madigai	5	4	7	4	12	8
11. Manjakollai	2	-	-	-	2	-
12. Mappillaikuppen	2	1	2	2	3	4
13. Maruthapettinam	4	3	2	2	6	5
14. Pallakulam	6	3	7	4	13	7
15. Panderavadi - T	3	5	4	4	7	9
16. Paravacherri	-	2	-	-	-	2
17. Pudukottai (Vaduvur)	5	4	4	4	9	8
18. Pullikkudi	5	4	4	5	9	9
19. Sambalur	3	1	1	2	4	3
20. Sendangada	9	8	7	7	16	15
21. Sendangudi	17	3	5	4	17	7
22. Thenpathi	6	5	5	6	11	11
23. Vandayar Irruppu	6	3	4	5	10	8
24. Vaithinathampettai	10	4	7	8	17	12
25. Villangudi	7	4	11	7	18	11
Total	123	85	91	101	214	186

208 Korai mat weavers out of 400 weavers are doing this job as hereditary occupation.

Scheme of the Study

The scheme of the study is divided into 9 chapters. The first chapter which is an introduction highlights the necessity of extending encouragement to cottage industries in view of their high employment potential and low capital requirement. But no meaningful effort is made so far to make them effective tools of rural transformation. This chapter also gives the salient points of the remaining chapters.

The second chapter vividly describes how Korai mat and mat weaving were held in great esteem right from time immemorial and how the mat became an object of veneration on all important occasions - social, religious and cultural. The industry's role in providing employment opportunities to agricultural labourers during slack season is also clearly brought out.

The third chapter attempts to explain how Korai mat weaving came to be localised in the Thanjavur district of Tamil Nadu. This localisation was examined with reference to Weber's Theory of Localisation and was found to substantiate Weber's Theory.

Chapter four gives a detailed description of the cultivation of Korai grass, its processing etc. It then goes on to

narrate the various stages in the mat weaving, the technique of production and also the various methods adopted in fixing the quality of the mats.

Chapter five discusses the socio-economic aspects of Korai mat production. It is pointed out that the relevant information is collected on the basis of a comprehensive survey conducted in 154 mat weaving units spread over 25 villages of Thanjavur District.

Chapter six analyses the capital and cost structure of the Korai mat weaving units and chapter seven deals with the profit aspect of the industry.

The eighth chapter gives a lucid description of the marketing of the Korai mats. It examines the many problems faced by the weavers in marketing their produce including the exploitation to which they are frequently subjected to by middlemen who advance both finance and raw materials.

The final chapter presents the conclusions arrived at in the course of the study. It has to be stressed in this connection that the entire study was based on the survey conducted in 25 villages. Excepting the primary data collected, there was no other data to fall back on. Although the utmost care was taken to make the survey as representative as possible, defects may have crept in; if so, it is likely to act as some sort of a limitation on the conclusions arrived at.

CHAPTER - II

KORAI MAT - ITS CULTURAL AND SOCIAL IMPORTANCE IN INDIA

There is no gainsaying the fact that Korai mat has been occupying pride of place in the cultural, social and religious life of the people in India. India is a land of villages. More than 80% of the people live in villages.¹ Most of the houses of the village folk are only tiny huts, measuring about 10 feet by 10 feet with thatched roofs, mud walls and mud floor plastered with cow dung. They cannot afford to have costly articles of furniture such as benches or sofas or chairs or cots. Their huts are too small to accommodate such things. Every house in the village therefore contains at least half a dozen Korai mats, which are spread on the floor and used by people very often either to sit on or to sleep. To spread a Korai mat on the floor and invite the guest to sit on it is the first act of hospitality and welcome in every household.

The Korai mats are the proud possession of the poorer classes of society and they are a necessary adjunct to the richer classes too. In well furnished modern bungalows, Korai mats with superior quality and several designs are found in plenty. People

1. India - 1974, Publication Division - New Delhi,
Page-13.

generally sit on the Korai mat with legs crossed. Business houses use Korai mats as spreads and floor coverings serving the same purpose as woolen carpets. On important occasions like betrothals, marriages, births and ear-boring ceremonies, it is a holy convention to sit on Korai mats. Wealthy people own both Korai Pandal mats and Korai Dinner mats and others get them either from relatives or on hire from merchant dealers.

The maximum economy of space is thus effected in the small and simple houses of the rural areas by spreading the Korai mat on the floor and accommodating maximum number of persons.

It is undoubtedly cheaper and long-lasting. Their utility value is greater to the rural people, compared to other articles. When an ordinary chair of the modern type costs anywhere around one hundred rupees, the Korai mat of ordinary variety costs only six rupees. It is simple, elegant, neat, convenient and comfortable. It can be easily washed and dried and used for several years. After using it, it can be conveniently rolled and placed in a sheltered nook for future use. It is light and portable and carried wherever one goes. It is the common man's carpet for all occasions. It is very nice to sit on during the summer season. It does not conduct heat; on the other hand it has a cooling effect. After a long

day's hardwork, if one sleeps on a Korai mat, it gives complete relaxation and removes all pains from the body. People in the rural households say that Korai mat gives more comfort than even modern mattress made of silk or cotton.

During festival days and important occasions, when people eat feasts, they sit cross-legged on Korai mats. New couples are invited and asked to sit on the decorative Korai mats and then perform the important ceremony of tying the 'Tali' or 'Mangalyagutram' around the bride's neck and garland each other. Sitting on the Korai mats is considered as a symbol of piety and purity. After the marriage, bride and bridegroom are taken to the groom's house and are seated on a new Korai mat and given milk and plantain fruit. This is a very ancient custom followed by all castes and communities. On the wedding night the new couple sleep on a decorated Korai mat. Usually a Korai mat is spread on a mattress. This custom is prevalent even now. When a child is born, the grand parents present a cradle with a new Korai mat. The infant will be placed on the mat in the cradle which will be swung a few times with all guests seated around. During the earboring ceremony, the child is seated in the lap of its maternal uncle who will be seated on a Korai mat.

During meditation and prayers, the devotees, priests and saints sit on the Korai mats, as they consider Korai as sacred and pure. During religious discourses, the preachers generally sit on Korai mats. The purohita and other religious heads generally use Korai mats.

Just before Pongal or harvest festival, the old korai mats are discarded and new ones are bought for use during the festival and for the coming year. During the Purattasi month i.e., from the latter half of September to first half of October, some high caste Hindus are in the habit of replacing the old ones or wash the old ones as a kind of religious ritual. Thus korai mat is indispensable for the rich and the poor alike both in the town and the village.

References to the uses of the korai mats are found in our ancient literature. Our puranas and Epics speak in praise of the significance of the korai mats. The high, the low, the poor and the rich, the young and the old, without exception, have used korai mats according to their social and traditional status. Special mention is made about the korai in several books of ancient lore. In 'Periapuranam'² which is the work of the celebrated saivite saint, Saikishar, there is an interesting

2. 'Periapuranam' describes the lives of 63 saivite saints and deals with the struggle between the saivite saints and the Jain monks. Saikishar: Periapuranam, Samaja Edition - 1966, page-343, verse No. 2505, Thirugnana-sambandhar Puranam.

reference to the practice of the Jain monks who carried with them their Korai mats wherever they went. They meditate and sleep on korai mats.

'Purananooru'³ which is a fine literary treasure of Tamil says that in olden days warriors seriously wounded in battle were made to lie down on korai mats. There is also a reference to the Queen Perunkopendie, who after her husband's death in the battle, wanted to immolate herself in fire but she was prevented by learned people of the locality. She narrates that the widow should not even lie on the mat and take delicious food.

In 'Silappadikaram'⁴, there is reference to a thing called 'Thayyisu' which resembles the korai mats. Madalan, a Brahmin Pilgrim returning home after a pilgrimage to Tirupathi and Srirangam, tells Kovalan and Kannagi who were on their way to Madurai, that Vishnu of Srirangam used a serpent for a mat. In the Sangam Age, bullock carts had hoods (roofs) made of the korai mats. The navigators who were utilised by the Tamilians in those days used mats called 'Pai marga'.

3. 'Purananooru' belonging to the literary treasure of the Kadai Sangam of the 2nd Century A.D. deals with heroic deeds of the warriors and kings. See Purananooru by Perungopendie, New Century Private Ltd., Madras, 1992, p.111.

4. 'Silappadikaram' by Ilango Adigal is a famous Tamil Epic of the 4th Century A.D. It gives us an account of the culture, customs and manners of the people of that age. Ilango Adigal: Silappadikaram; Thirunelveli Saiva Sidhanda Noorpachippu Kashagan, 1942, p.252, Line No.38.

In the incomparable Vaishnavite literature, 'Nalayira Diviaprabhandam'⁵ one of the twelve Alvars, Thirumashisai Alvar, requested Vishnu, the presiding deity of Kanchesपुरam to roll up his mat and leave the city because his devotee, Kanikannan had been banished by the ruler of Kanchesपुरam. Then after the return of the same disciple to Kanchesपुरam, the Alvar requested Lord Vishnu to take shelter in His mat and being pleased with His disciple, the Lord returned to the native town and reclaimed his sacred mat.

In 'Manonmaniam', Prof. Sundaram Pillai refers to a saint who had renounced all his worldly desires and possessions including his mats and pillows.⁶ Kambar, the great poet, in his 'Kamba Ramayanam' refers to the waves of the sea and compares them to the movements of a mat when it is shaken.⁷

Ancient Tamil Literature makes frequent references to 'Payal'. The 'Payal' represented a bedding or a mat especially woven by the morai grass. In 'Naduvai Vadai'⁸, the royal bed

5. 'Nalayira Diviaprabhandam' is a collection of the poems of the famous Alvars. The reference made here is a poem by Thirumashisai Alvar. 'Adiseshan', the thousand headed Cobra was used as a mat by Lord Vishnu. Nalayira Diviaprabhandam; Manali Lakshmana Mudali, Mailai Madhavadasa (Ed.); Madras-1092, P.14, Line-23.

6. Sundaram Pillai; Manonmaniam; Dr. K. Thirumani, 1950.

7. Kambar; Kamba Ramayanam, Sedagoba Ramanaja Achariyar, 1956, Poem No.3.

8. Nedu Nalvadai in 'Pattupattu'. Dr. U.V. Sannatha Iyer Publications, 1931, p.441.

is described as decorated with soft pillows and mats. This brings out the fact that Korai mats were largely used in those days. 'Narai Vidu Dhadu'⁹ is a poem by Sathimaru Pulevar, who asks a crane to carry a message to his wife in order to tell her that he is living a very poor life in a chatram without any comfort and even without a mat to sleep on.

In ancient days, the Tamil Kings had their orders and commands written and published on the decorated Korai mats. The Korai mats resembled the Notice-boards now found in important places with important pieces of information. The Korai mats used for this purpose were large and lasting. All the important items were written and published on them in order to attract the attention of the people.

In 'Perumpanatruppadai'¹⁰, there is a reference to the preparation of the Korai mats. The term 'Aarai' refers to Korai mats. In the very same work, there is mention about the skins of animals which were used as mats. In poem number 217 mention is also made about 'Panchaikkorai' and reference to Korai mats. In 'Thiruthondar Puranam'¹¹ there is a reference

9. Sathimaru Pulevar; Narai Vidu Dhadu in Teni Padal; Saiva Sidhandham - 1932.

10. Perumpanatruppadai in Pattupattu; Dr.U.V. Saminatha Iyer, 1931, p.193, Line 217.

11. This puranam deals with the lives and achievements of Saivite Mayanars. See Seikishar; Thiruthondar Puranam; Samaja Edition - 1956.

to the Korai mats. 'Pattinappalai'¹² is another evidence to prove the copious use of the Korai mats. In stanzas 11, 174 there is a reference to the quality and size of the mats made out of Korai.

In 'Maduraikkanchi', a reference is made to 'Palmaran' resembling a mat which is made of korai grass - the korai grass of superior variety was used.¹³

There are references and evidences to the use of the korai not only by the common people but also by the Rishis and saints. In Sanskrit, we find a number of references to the use of Korai mats. The correct word meaning Korai mat is 'Katakams'. It was used by all the people. 'Katakams' of superior texture and variety was in vogue even during the vedic times. The Rig Veda women were engaged in painting of mats from grass or reeds.¹⁴ They were used as 'Asanag'. The 'Mania Grass' was also used for the production of mats. There are references to the various uses of these mats in the 'Ramayanam'¹⁵ and 'Bhagavadam'¹⁶. The

12. This is an ancient Tamil Literature depicting the lives of the people of that period. Dr. U.V. Saminatha Iyer, op.cit; 1931, p.523, Line 174.

13. Maduraikkanchi in Pattupattu, Dr. U.V. Saminatha Iyer, op.cit; 1931, p.314.

14. Chopra et.al; A Social, Cultural and Economic History of India, Macmillan, Delhi, 1974, p.14.

15. Ramayanam deals with the life of Rama and Sita and explains the significance of Vishnu. Kambar; Ramayanam, Sadagoba Ramanuja Achariyar, 1956.

16. Bhagavadam speaks of the lives of the Pandavas and Kauravas and their adventures. 'Truth always Triumphs' is the gist of this mighty work.

saints used to sit on them and do Tapas. It was also believed that the Korai, be it Dharba or Manja or Reed is sacred and spotless. Such mats were considered to be the excellent symbols of piety and orthodoxy. As the ancient saints attached greater importance to the piety and purity, such mats were recommended, as the skin of deer was scarce and beyond the reach of the common lot.

The very word 'Aasana' represented a seat viz., the 'Korainai'. The kings and the Emperors too used highly decorated and well finished and well furnished Korai mats at the time of their prayers and while holding conferences with 'Rajarishis.'

It is thus clear from the above, that the Korai mat has occupied an honourable place in the social, cultural and religious lives of the Tamils from prince to pauper and from saint to ordinary devotee. Certain section of the society devoted themselves to the Korai mat weaving. Having plenty of leisure and for want of profitable work, other sections also take to this work. The Korai mat weavers, whether in small towns or villages, continue to follow their ancient vocation which remains localised. They continue to use the traditional tools. In fact they had been bequeathed from father to son for generations.

Many people are of the opinion that mat-weaving is a caste-cum-family oriented craft. The cultivator or the artisan like mat weaver knows little of the comforts and luxuries of

urban life. It cannot be denied that the motto of simple living and high thinking is to some extent responsible for the simple way of life of the villagers.¹⁷ Territorial, occupational and other forms of social mobility of the rural population is comparatively less intensive and their occupations like cultivation of lands, mat weaving and other domestic industries are mainly governed by custom, tradition, culture, religion etc. For generations the village mat weavers have little or no knowledge of the outside world. They remain in almost complete spatial and mental isolation.

As a result, the production and marketing of mats remain unorganised. If necessary steps are taken to develop this industry, it will become a prosperous cottage industry providing earnings and employment to many of the rural folk.

17. R.K. Mukherjee: Economic Surveys in Under developed Countries; Asia Publishing Co., Bombay, 1962; p.25.

CHAPTER - III

FACTORS LEADING TO THE LOCALISATION OF KORAI MAT WEAVING INDUSTRY IN THANJAVUR DISTRICT

It was Alfred Weber, a German Economist who enunciated for the first time a systematic theory of industrial location. Weber discovered by investigation and analysis the factors which operate as economic causes for determining the location of industry. Through a process of cost analysis he arrived at the reasons which lead to the localisation of industries.

Weber classifies the factors influencing location broadly into two :-

1) Primary causes of regional distribution of industry (Regional factors) and (2) Secondary causes for redistribution (Agglomerating and deglomerating factors) or local factors.

Regional Factors

Two regional factors have been isolated by him viz. (a) transportation cost and (b) labour cost. Transportation costs are determined by two basic elements - (a) weight to be transported (b) distance to be covered. Each industry will be drawn

to the area which offers the best transport relations both with regard to sources of raw material and markets.

The actual basis on which production will get oriented within a location, depends upon two conditions, that is the type of materials used and the nature of their transformation into products. Weber has classified raw materials as 'Ubiquities' and localised. The latter obviously exert a greater influence on the location of industry than the former. Further, raw materials have been treated as 'pure' and 'weight losing'. Thus the degree of attraction depends upon the extent on which raw materials lose their weight in the process of production. Weight losing materials have got a better attraction than pure materials.

On the basis of the above simple propositions Weber formulates his law of transport orientation. He argues that the proportion of the weight of localised materials to that of final product exercises a determining influence on the location of manufacturing industries. If this proportion (which he calls 'Material Index') is high, production tends to be attracted to the places of deposit, and if low, at the centre of consumption. Thus the relationship between the gross weight of the localised materials and weight of the final product is highly significant in determining location of an industry.

Weber proceeds to examine the causes of deviation from points of least transportation costs. When there are differences

in labour costs, industry may deviate from the optimal point of transport orientation. This will be possible only when the additional cost of transportation at the new centre is more than compensated by a saving in labour costs. Thus the equilibrium position attained on the basis of transport costs may be disturbed due to the attraction of cheap labour centres. The potential attracting power of labour depends on two basic factors: (1) Labour Cost Index (the proportion of labour cost to the weight of the product) and (2) Locational Weight (the weight to be transported during the whole process of production). The extent of deviation caused by varying labour costs is determined by the ratio of the Labour cost to the locational weight which has been called 'Labour Co-efficient'. It is on the basis of this analysis that laws of labour orientation are formed by Weber. When labour costs are varied, an industry deviates from its transport locations in proportion to the size of its labour co-efficient.

Agglomerative and Deglomerative Factors

Deviation from the minimum transport point also takes place due to the operation of agglomerative or deglomerative tendencies. Agglomeration refers to the advantages or cheapening of production due to the concentration of an industry. Here the reference is mainly to external economies. The opposite tendency of deglomeration leads to a reduction in the

cost of production due to decentralisation. This is usually caused by a rise in local taxes and land value as a result of concentration. These two tendencies influence in opposite direction. Industries with a high proportion of manufacturing expenses in their total costs of production have a strong tendency to agglomerate because external economies can largely be effected in that sphere.

The power of agglomeration to attract industry depends on two factors : firstly, the ratio of manufacturing costs to the total weight of the product (index of manufacture) and secondly, the total weight to be transported during the whole process of manufacture (Locational weight). The ratio of manufacturing cost of locational weight is termed by Weber as "Co-efficient of Manufacture". A high co-efficient of manufacture encourages agglomeration and Vice Versa. Hence every agglomerating tendency offers a deviating force which tends to distort the transportation net work.

In the following paragraphs we propose to analyse the location of Korai mat weaving industry in Thanjavur District in the light of Weber's theory of location.

In the case of Korai mat making, raw materials and labour are the two major factors which influence the location of the units. The raw materials required for Korai mat making

are koral grass, aloe fibre, country wood, dye stuffs and thread. Koral grass and aloe fibre are available in plenty in Thanjavur district.

Another factor which exerts influence in the location of industries is the availability of cheap labour. In Thanjavur district agriculture is the main occupation. But agriculture cannot provide employment opportunities throughout the year. During the off-season they remain unemployed. A sizeable surplus labour force especially landless workers bring down the market wage rate. In other words plentiful supply of cheap labour (off-season and other) in Thanjavur district facilitated the localisation of koral mat weaving units in Thanjavur district.

Other factors such as dye-stuffs, thread etc., which are also required for the manufacture of koral mat making do not exert any significant influence in the localisation of this industry.

In addition to the factors mentioned above access to market is a factor to be reckoned with in considering the location of industries. This is because industries located near the market could help to reduce the cost of transportation of the finished goods. In this connection it may be pointed out that in each and every village in Thanjavur district there are

several local markets called "Sandhai" to dispose of the finished korai mats. In addition cheap transport facilities are available in the locality. This district has hundreds of temples and several pilgrim centres. During festive season these centres serve as attractive markets for korai mats.

All the factors mentioned above are in conformity with Weber's explanation regarding localisation of industries.

In addition to the above factors, in many cases the decision by the businessman to operate his business in the town in which he was born is a deciding factor. In the case of Korai mat weaving, it grew from generation to generation without probably much concern with political or social transition. Once he settled at one place, he will not ordinarily move for centuries together unless he was forced by economic or political situation. Thus the Korai mat weavers continue to enjoy the same position as they were enjoying for hundreds of years ago.

Abundance of labour during non-agricultural seasons, availability of the spontaneous growth of Korai grass and also fibre plants, suitable sites and favourable climate, housing situation, local demand for korai mats and inheritance of the traditional occupation leads to a viable source for concentration of Korai mat weaving industries in Thanjavur District.

CHAPTER - IV

TECHNIQUE OF PRODUCTION

Introduction

Korai mat weaving is a hereditary occupation in Thanjavur District. Nearly 12,000 persons of the District are engaged in it on full-time basis.¹ Generally the head of the family is helped by his wife and children in the different stages of production. Mat weaving, being a cottage industry, the loom is kept and operated upon in a sheltered corner of the weaver's hut. And we find at least one loom in each hut. This makes each household a Korai mat producing unit.

Manufacture of Korai Mat

The manufacture of Korai mat is mainly done by hand. The implements used are simple and cheap. The following are the important tools used in the district (1) loom which is locally made (2) knife (3) charka (spinning wheel) (4) polishing stone (5) planks (6) chatti or mud pot (7) basin (8) porcelain cup (9) metal vessel (10) drawing wheel (pudi thalai) (11) turning bamboo rod (pari vattan) and (12) mathu.

The raw materials essential for mat weaving are (1) Korai (2) Twisted yarn (3) Dyes and (4) Fuels.

1. The Hindu Weekly Magazine, 24 October, 1976.

Stages of Korai Mat Manufacture

The process of manufacture of Korai mat consists of the following stages (1) Processing of Korai (2) Dyeing (3) Preparation of the warp thread (4) Setting up the loom and weaving (5) Tightening the weft, and (6) Binding the edge.

A brief description of the process of Korai mat weaving in the villages of Thanjavur district is given below :-

The Korai mat weavers can work well on their own natural setting. This craft has its own tradition, ways of production and design. It calls for great sensitivity, patience and service before results are produced. In them is embodied the accumulated experience and expertise handed down traditionally from parents to children. Manufacturing units in rural areas are necessarily small. They mainly cater to local demand. Skills and technological requirements are necessarily not very exacting. Most of the activities are based on indigenous supply of equipment.²

The absorption of higher technology in the villages is closely connected with the cost involved in the process. Even if the technological improvement is highly productive, the investment required is beyond the range of the village mat weavers.

2. Bepin Behari, L: Economic Growth and Technological Change in India, Vikas, Delhi, 1974.

1. Cultivation of Korai Grass

The Korai grass is grown on a large scale on river and canal banks and also in fields where there is plenty of water. The plant is an erect, glabrous herb growing to a height of 4' to 5' with perennial underground stems spreading over an area of 20 square feet or more. It is cosmopolitan in habit and thrives in almost all kinds of soils even under varying conditions of moisture and temperature.³ In wet lands the plant is robust sometimes attaining a height of 5½ feet. Each grass is clothed with bent hairs, leaves are dark, green, glabrous, 3-12 inches long. The korai grass is thick, linear and very sharp at the tips. The stem is usually a slender, elongated rhizome. It is usually three-sided, and solid.

In recent times, farmers in Thanjavur district evince keen interest in raising korai, since it fetches good return for them. Three harvests of korai are normally made during a year. On the 150th day, the first harvest is made, and the second comes after 120 days of the first and the third harvest after another 120 days. After the first sowing is over, for nearly 10 years, no fresh sowing is necessary as fresh crop can be raised from the underground stem.⁴ The yield per acre is normally 200 bundles or 'muduchug' (one bundle or muduchug weighing about 120 lbs.) per every season.⁵

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3. Tedulingen.C and Venkatanarayana.G : A hand book of some South Indian Weeds, Govt. Press, Madras, 1955.
 4. The Hindu Weekly Magazine - October 24, 1976.
 5. A survey of Korai mat weaving at Coleroon (Thanjavur District), Annamalai University, 1977.

Korai grown wild on the banks of streams and pools are permitted to be collected free of charge. Where it grew on the banks of rivers and irrigation channels and on lands adjacent to railway tracks, the right to cut the reeds was sold by auction. In the case of patta lands, the owners cut the korai themselves. Sometimes farm labourers were employed to cut them. They are sold to the merchants. In most cases the lease was held by the merchants. In Thanjavur district the reeds were mostly collected by scheduled castes and sold to workers. The korai mat weavers generally depend upon merchants and others who had taken the lease of the korai lands.

In addition to local suppliers, the korai mat weavers also obtain korai from the adjoining villages and also from other places such as Nagapattinam, Sirkali, Nagore, Ammapet, Karikal, Mayuram, Mannargudi, Needamangalam, Koradacheri, Thiruvarur, Pattukkottai, Thiruvaiyaru, Aduthurai. The korai is sold in bundles or muduchus, each weighing about 30 Kgs. Some of the co-operative korai mat weaving societies import korai from Karur in Tiruchirappalli district and Wandiwash in North Arcot District.

The Technique of Determining the Quality of Mats

Out of one bundle of korai some 20 to 70 korai mats can

be made.⁶ There are three types of koral mats, namely the plain coarse variety, the fine stripped variety, and superfine variety. The first two varieties are made in Thanjavur District. The quality of a mat is determined by the kind of warp threads used and by the number of warp threads contained in a span measuring 9 inches. Using the thread as the warp and the koral grass as the weft the mats are woven on the loom. In Thanjavur district mats produced were mostly coarse and medium varieties. In the coarse variety, the warp is made of aloe yarn and the weft of koral sedge, with the pith 20 to 24 counts-72" length and 42" width and in the medium variety, cotton yarns of 20"s to 40"s are used as warp and split koral as weft - 30 to 52 counts - 60" to 70" length and 30" to 36" breadth.⁷

The process of manufacture of Koral mat consists of the following stages :

1) Procuring of koral (2) Dyeing (3) Preparation of the warp thread (4) Setting up the loom and weaving (5) Tightening the weft and (6) Binding the edge. A brief description of the process of koral mat weaving is given below.

6. Chitra V.R. and Viswanathan Tekumalla : Cottage Industries of India, Silpi Publication, 1948.

7. Department of Statistics: Report on Cottage Industries in Select Pirkas in Madras State, Madras, 1956.

1) Processing of Korai

The first step in the manufacture of mat is the processing of korai. As korai grass contains moisture, it is to be spread evenly on the ground for 15 days so that it is dried fully to get the golden colour. In drying, care is to be taken to see that the korai grass does not become moist by rain or water. It is then dried up in small bundles known as 'Pidi' (of the size that can be contained in the palm) to which a medium sized stone is tied as weight and is invested in running waters away from harsh sun light for about 10 days. All bundles need not be soaked for 10 days. The soaking depends on the counts of the mats to be woven. Normally the korai grass used for weaving mats of 100, 120, 149 counts has to be soaked for 3 days. These two initial processes take 25 days for which the weaver obtains no payment as wages. The soft soaked grass is then split with a knife and the pith inside the grass is removed and the outer cover of the grass is used for weaving.⁸

Usually 4 or 6 strands of weft are obtained from a single korai grass. They are then dried in shade. This work is done

8. Splitting of korai grass is a difficult job and only skilled persons with good eyesight are engaged as the work needs delicacy of touch and careful handling. With the help of knife, the korai is pierced at 3 or 4 places. Then the strands are drawn by placing either the fingers in the piercing portion or by placing the knife through alternate holes and drawing it vinchly to the tapering end.

only by men. The time taken for the splitting of strands of various sizes and thickness are furnished in Table - 4.1.

Table - 4.1

Time taken for splitting of strands of various sizes

Size	Time	
	Days	Hours
18 x 24 inches	1	2
30 x 72 "	1	3
36 x 72 "	1	4
30 x 72 "	1	6
36 x 72 "	2	0
30 x 70 "	2	6
30 x 72 "	2	8
36 x 72 "	3	0

The dried korai is then sorted out according to colour, fineness, uniformity of diameter and length.

There are three varieties of korai ranging at 2.5', 3.5' and 3.75'. The normal prices of these varieties prevailing in the different villages are given in Table - 4.2

Table - 4.2

Prices of Different Varieties of Korai

Villages	Price Rs. per bundle		
	2.5'	3.5'	3.75'
	Rs.	Rs.	Rs.
1. Ahalangun	13	15	17
2. Annaikkuppan	12	14	15
3. Araiypuran	14	15	17
4. Arunthavapuram	12	13	15
5. Coleroon (Thaikkal)	15	18	20
6. Kerasimeendarkottai	12	13	15
7. Kidarangondan	13	14	15
8. Kodikkalpalayam	14	15	16
9. Kengalancherri	12	13	14
10. Madigai	12	13	14
11. Manjakkollai	13	14	15
12. Mappillaikuppan	13	14	16
13. Maruthapattinam	12	13	15
14. Pallakulam	13	14	16
15. Panderavadi	15	16	17
16. Paravacherri	13	14	15
17. Pudukkottai (Vaduvur)	12	14	16
18. Pulliakkudi	12	13	14
19. Sembalur	12	13	14
20. Sendangadu	12	13	14
21. Sendangudi	15	18	20
22. Thanpathi (Vaduvur)	13	14	15
23. Vandayar Irruppu	15	16	17
24. Vaithinathampettai	14	15	16
25. Villangudi	15	18	20

From Table 4-2 it can be seen that price of korai bundles ranges from Rs.12 to Rs.20 depending upon the length and availability of the material in the neighbourhood.

A bundle of korai will be sufficient for weaving nearly 3 mats. An idea of the annual requirements of korai grass bundles per loom for the surveyed villages is given in Table 4.3.

Table - 4.3

Annual Requirements of Korai Per Loom

Villages	Types of Korai consumed (in bundles)			Total requirement of korai bundles.
	2.5'	3.5'	3.75'	
1. Ahalangam	990	320	35	1345
2. Annaikkuppam	290	-	-	290
3. Araiyapuram	450	90	-	540
4. Arunthavapuram	976	32	-	1008
5. Coleroon (Thaikkal)	645	150	138	1133
6. Karaimendarkottai	950	24	-	974
7. Kidarangondan	81	-	-	81
8. Kodikkalpalayan	460	30	10	500
9. Kongalancherri	680	80	20	780
10. Madigai	1040	-	-	1040
11. Manjakkollai	70	-	5	75
12. Mappillaikkuppam	212	-	-	212

(Contd.)

Table - 4.3 (Contd.)

Villages	Types of koral consumed (in bundles)			Total requirement of koral bundles.
	2.5'	3.5'	3.75'	
13. Maruthappattinam	1370	40	20	1430
14. Pallakulam	980	-	-	980
15. Pandaravadi	530	-	-	530
16. Parevacherri	270	-	-	270
17. Pudukkottai (Vaduvar)	826	-	-	826
18. Palliakudi	976	35	-	1011
19. Sembalur	450	-	-	450
20. Sendangadu	827	-	-	827
21. Sendangudi	484	130	110	724
22. Thanpathi (Vaduvar)	736	-	-	736
23. Vandayar Irruppu	976	32	-	1008
24. Vaithinathampettai	830	60	-	890
25. Villangudi	976	30	40	1046
Total	17,275	1053	378	18,706

It may be noted that totally 18,706 bundles are required by the sample villages of which 17,275 bundles are 2.5 inches, 1053, 3.5 inches and 378, 3.75 inches.

Dyeing

Dyeing is the next step in the manufacture of mats. A vessel (mud chatti) which holds five to six litres of water is placed on a furnace and the water is boiled. The required quantity of dye is dissolved in water and the koral grass is soaked in it for about an hour. The grass is then boiled after which the koral assumes the colour of dyes used. Soon after the dyes are dissolved in boiling water, some acetic acid is added for fast colours.⁹

The quantity of dyes used depends on the design and the size of the mats. Normally five bundles of koral require $\frac{1}{2}$ Kg of dye for colouring. Green and red were the traditional colours used. Thanks to the encouragement given by the All India Handicrafts Board, the weavers now use green, red, rose, violet, yellow and black colours.¹⁰

Dyeing is performed by both sexes. The male workers perform this task in their workshops but the women do it at home. No scales are used to weigh the dyes. By rich experience, weavers know the correct quantity of dyes to be used. However, some

9. A table spoon of gingelly oil is used in the case of red and green dyes to hold fast colour.

10. The dyes used in ancient days were not the chemical substances which is known today as synthetic. The ancients relied on natural materials. They used plants, wood, shell, fish or sometimes simple metal salts even as alum. Now-a-days a number of synthetic dye stuffs are being used.

use spoons while others use copper tin to measure the quantity of dyes. In Coleroon, Sirkali and other places dyes are supplied by the merchant middlemen to the weavers while korai mat weavers co-operatives at Villanqudi and Vandayar Irruppu purchase dyes from the shops in the nearby towns.

The co-operative korai mat weaving societies usually purchase 120 Kg of dyes stuffs per year. Table 4.4 shows the price of dyes.

Table - 4.4

Price of Dyestuffs

	Superior variety Rs.	Ordinary variety Rs.
Price of all colours except rose (100 grams)	10.00	8.80
Price of rose colour (100 grams)	15.00	13.00

Fuel is required for dyeing the korai. The mat weavers use country wood as fuel to boil the water. The average consumption of fuel is about 253.7 lbs. per loom per year. Data relating to the total quantity of fuel used by the sample units are tabulated in Table - 4.5.

Table - 4.8

Quantity of Fuel Used

Villages	Total quantity of fuel used (in lbs.)
1. Ahelangan	5292
2. Annaikuppam	1446
3. Arayapuram	2488
4. Arunthavapuram	4307
5. Coleroon (Theikkal)	6420
6. Karsimeendarkottai	3400
7. Kidaragondan	258
8. Kodigelpalayan	762
9. Kongalancherri	1171
10. Madigai	4070
11. Manjakkollai	251
12. Mappillaiuppam	633
13. Maruthapattinam	4579
14. Pallakulam	3960
15. Pendaravadai, T	1584
16. Paravacherri	253
17. Pudukottai (Vaduvar)	3231
18. Pulliakudi	3615
19. Sembalur	1265
20. Sendangodu	6815
21. Sendangudi	5776
22. Thenpathi (Vaduvar)	3179
23. Vandayar Irruppu	3757
24. Vaithinathampettai	3216
25. Villangudi	3048
	<hr/>
	74,778

It may be noted that the sample units require 74,776 lbs. of wool whose value at the prevailing prices (1961) works out to Rs. 12,970

Preparation of the Warp

After the process of dyeing the weft koraí strand is completed and the preparation of warp cotton thread is taken up. The kind and quality of the yarn used for warp varies with the quality of the mat. Cotton yarn of 20 to 50 counts are used for medium varieties while 80 to 100 counts are used for fine varieties.¹¹ One bundle or 'pachang' of coarse and medium variety of koraí require 30 grams of yarn while fine variety koraí requires 40 to 60 grams of yarn.

In some of the mat weaving outcrops run by Harijans, aloe fibre is used for coarse varieties as it is cheap. Aloe yarn is obtained from the tender shoots of the plant. Mostly women and children collect the plant and convert them into white fibre yarn. The average consumption of aloe yarn and cotton yarn by the sample mat weaving units are detailed in Table - 4.6.

The following table (Table - 4.7, Annexure-4) shows the time taken for the process of each item by a single mat weaver.

Setting up of the Loom and Weaving

Using the thread as the warp and the grass as the weft, the mats are woven on the loom.¹²

11. Nearly four decades ago, the cotton thread bought from the market and four yarns had to be retwisted together at home with the help of charka to give sufficient strength and durability to the warp thread. Nowadays the factories supply the twisted yarn which can be directly used.

12. The following are the various parts of the loom

Table - 4.6

Villages	Average consumption of aloe fibre	Average consumption of cotton yarn
1. Ahalangam		575 gram
2. Annaikuppen		200
3. Arayapuram		310
4. Arunthavapuram	140 gram	360
5. Coleroon (Thekkal)		530
6. Karaimendarkottai	180	150
7. Kidaragondan		165
8. Kodigalpalayam		195
9. Kongalancherri		250
10. Madigai	150	195
11. Manjakkollai		180
12. Mappillaiuppen		273
13. Maruthapattinam		245
14. Pallakulam	300	292
15. Pandaravadi, T		284
16. Paravecherri		190
17. Pudukottai (Vaduvar)		214
18. Palliakudi	.75	228
19. Sembalur		195
20. Sendangadu		235
21. Sendangudi		530
22. Thanpathi (Vaduvar)		225
23. Vandayar Irruppu	250	415
24. Vaithinathampettai		360
25. Villangudi		550

(F.N. 12 Contd.) 1) Mana palagai (sitting plank) 2) Mullai kambu (wooden legs) (3) Suthia pirimaram (Beam) 4) Munthandu (Frontal beam) (5) Achu (lead) 6) Veludu kambu (Beam) (7) Mukeli (Tripod stand) 8) Mithi pattai (Treadle Beam) (9) Anai Kusud (separating beam) (10) Kuchali (Needle) (11) Ethu Kalthar (Round Bamboo Stick) and (12) Cotton pad (leg rest).

It may be noted that the average consumption of cotton yarn varies from 150 gram to 530 grams - and that of sisal fibre from .75 gram to 300 grams. A space of 12' x 6' is required to set up a loom. The implements used in weaving are simple and old. Most of the implements are locally made by the village carpenters. The loom consists of a loose assemblage of bamboos and wooden pieces of 4 pegs 7.5' apart, with a lengthwise distance of 11'. Two bamboos are placed at a distance equal to the length of the mats. The warp strand is passed round one of the bamboos. Before it is taken to the second bamboo, the strand passes through a wooden plank with eyelets in it. At the second bamboo, the string is knotted up. In this manner, the requisite number of warps is prepared to facilitate the weaving of mats of required breadth. A tripod stand-like device is placed nearest to the first bamboo. The odd threads are suspended from the tripod by means of a coir attached to the tripod. The even threads are formed by pushing down the bamboo, lifting the old threads to some distance and by pressing the top of the warp by a stick placed at the top. Then the even threads are passed down.

A stick with an eye to work the koral is inserted through the odd and even threads alternatively. The koral is kept in position by the stick and then it is pressed up by the bamboo. The coloured koral is inserted in such a manner as to produce

the required design. When the korai is woven up to the required length, then the weavers stop the working.

Weaving of Designs and Letters

Weaving is done by both the sexes. Skilled weavers are required only where an intricate design is to be woven or lettering is to be done. For weaving a design or a letter, the weaver at first weaves one foot of the mat in palm korai colour. He then starts weaving the letters from the right to left. Before he could proceed on this difficult job, some preliminary arrangements are made and each letter which has a fixed number of warp threads are calculated and arranged in mind. The following are the calculated letters with their fixed number of warp threads.

Table - 4.8

Letters and their Number of Warp Threads

A	14	H	14	M	16	T	14
B	12	I	4	N	14	U	11
C	11	J	14	O	12	V	14
D	12	K	15	P	14	W	21
E	14	L	14	Q	18	X	18
F	14	M	16	R	14	Y	14
G	14	N	14	S	11	Z	26

Suppose that the weaver has to weave the word 'WELCOME' on a 100 count mat. Some threads are left out at both sides of the mat. Generally 5 warp threads are left out. There are normally 330 warp threads on the loom. The total number of warp threads to be utilised for weaving 'Welcome' to be woven will then be 102 (See Table 4.8). For spacing the letter, 2 threads have to be left out in between. This amounts to 12 threads. The total number of threads to be left out altogether will thus be 114 (102 + 12). If the 5 threads to be left out on either side are also included, the total will amount to 124. Thus the number of warp threads to be utilised in weaving (leaving out the 124 warp threads) will be 206 i.e., 330-124. These 206 threads are divided into two equal parts at the centre.

After making a preliminary calculation, the weaver sits on the wooden plank and commences weaving. By his side he has two or three Kuchaali to be utilised at different stages. He starts by leaving out 103 warp threads, takes up 21 threads for 'W', the first letter and pierces the Kuchaali behind the Acha. The weaver takes up the waft thread and passes it by means of Kuchaali. The process of weaving is the same for other letters also.

With regard to designs, a formula exists for calculating the number of warp threads to be utilised for example, for a diamond design, 11 warp threads have to be left out, for a star design, 77 warp threads, for a rectangular design, 40 warp threads and so on. For weaving designs¹³ the weaver uses more than one Kuchaali. If korai of different colours (white and green) are passed inside the warp thread with the help of the Kuchaali, then green korai is passed as weft inside the warp thread and the white korai placed underneath it.

Tightening the Weft

After the weaver has woven a few inches of the mat, he has to undertake 'tightening the weft.'¹⁴ This has to be done only by male members as it requires a lot of stamina and physical endurance. This process provides closeness of texture as the korai grass used during weaving is wet and shrinks when it dries. To avoid gaps in texture, two persons sit on either side of the mat, each having one hand below and another above the mat slowly tightening up the previous day's weaving so that the weft strands come in close position to one another; thus ensuring that there is no discernable gap in the texture. This

13. There are few standard designs which go by the nomenclature, Bhavani, Gopuram, Carpet, Taj Mahal etc.

14. Before tightening the edges, the loose fringes of the korai mat will have to be twisted and the korai strands knotted together.

is a slow and painstaking process. So care should also be taken to see that warp threads do not snap when tightened.

Binding the Edges

After the mat is woven and after tightening the weft on the loom, the mat is removed from the loom and dried in the sun. The knots are put on the end of the mats and the unused warp is cut. The mat has an uneven selvedge. The selvedge is folded and reamed by a strong thin yarn.¹⁵ After binding the edges and tied together by a continuous thread, the unevenness is removed with the help of a sharpened knife. This work is mostly done by women and children of the weaver's family.

In Thanjavur District, mats are made out of Korai grass only. But commercial mattings are made in many of the Eastern countries from various sedges, rushes, and grasses. Usually the stalks or leaves of these plants are used along, but they may be combined with a warp of cotton or hemp. Among the principal species utilised, it may be mentioned the chinese mat grass '*Cyperus Legstiformis*' and the Japanese mat rush (*Juncus effusus*).¹⁶

15. Aloe thread is used for coarse varieties.

16. Albert F. Hill: Economic Botany, McGraw Hill Pub. Co., Bombay - 1952, p.44.

Chenni grass is used for mat weaving in Mysore and Chikemangalur districts in Karnataka state. In Central Provinces and Bihar, mats are made out of sindhi tree leaves, reeds of river leeds, bamboo strips, coarse grass and some times from stringes of san hemp. In Kerala State, Chittur, Talapilly and Trichur taluks are important mat weaving centres.

Persons with ordinary skill, ability and strength will take 4 to 5 hours to weave a coarse mat and 2 days for medium variety. Superdesign mats will take 10 to 15 days. Time taken for the process of each item by a single weaver is presented in Table - 4.7. The average consumption of Korai bundle or Maducha would be 4 maducha per day. One bundle or maducha will give about 4 to 4.5 ordinary coarse mats and 2 to 3 medium designed mats.

With regard to the durability of korai mats, ordinary coarse variety will last for 1 to 2 years, medium variety for 3 to 4 years and super fine for 5 to 7 years.

P.T.O

CHAPTER - V

SOCIO-ECONOMIC CHARACTERISTICS OF KORAI MAT PRODUCTION

In Chapter IV we have discussed the different stages and the techniques of Korai mat weaving. The present chapter deals with the socio-economic aspects of Korai mat production. The analysis with reference to the economics of Korai mat production is done on the basis of data collected through a survey. This survey covers 156 mats weaving units spread over twenty five villages in the Thanjavur District. The Talukwise distribution of the villages with the number of existing units and the number of units covered by the survey is given in Table 5.1.

Table - 5.1

Number of Existing Units and the Number of Units Covered in
the Survey

Taluk & Villages (1)	No. of Existing Units (2)	No. of Units covered by the survey (3)	Percentage of total (4)
Papanasam			
Arunthavapuram	48	7	15
Pulliakudi	55	8	15
Pattukottai			
Sendangadu	19	12	63
Sembalur	13	3	23

(1)	(2)	(3)	(4)
Orathanad			
Vandayar Irruppu	22	7	32
Karainoondarkottai	22	7	32
Thanjavur			
Pallekulam	75	8	11
Madigai	100	9	9
Nannilam			
Kongulancheri	12	6	50
Annakkuppan	4	2	50
Mappilaikkuppan	4	2	50
Tiruvaiyaru			
Vaithinathampettai	49	7	14
Villangudi	38	8	21
Meyyaram			
Pandaravadi - T	60	5	8
Ariyapuram	41	5	12
Nagapattinam			
Ahalangun	26	9	35
Manjakollai	5	1	20
Paravacheri	13	2	15
Thiruvarur			
Kidaramkonden	12	1	8
Kodikalpalayam	11	4	36
Maruthapattinam	114	10	9
Sirkali			
Sendangudi	37	8	22
Coleroon	11	6	73
Mannargudy			
Vaduvur (Thenpathi)	48	7	17
Vaduvur (Pudukottai)	52	8	13
	891	154	17.28%

It may be seen from Table 5.1 that there are 891 units manufacturing mats in the Thanjavur District. Of these two villages Coleroon and Madigai account for nearly 25% of the total units. Arunthavapuram, Pulliagudi, Vaithinathampettai, Vaduvur (Thenpathi) account for another 25% of the units. The other 50% of the units are spread over the other 18 villages. The Talukwise concentration of units is as follows :

Thanjavur Taluk	..	20
Sirkali "	..	17
Papanasam "	..	13
Mayuram "	..	11
Mannargudi "	..	77

The survey covers 154 units or 17.28% of the total number of units. In selecting the number of units from the villages, the type of ownership, community, size etc., were given due consideration. Hence the differences in the number of units selected per village.

In taking the sampling units, the different taluks/districts in which the industry is located are taken into account. It is quite natural to expect that the villages belonging to different taluks and districts may exhibit some inherent variations or differences. One of the purposes of

this study is to compare the different villages belonging to different taluks and districts to bring out the main features of each of them. So the sampling units are like that of a stratification method where each strata may be considered as comprising one taluk/district.

Number of Looms

In the course of survey it was noticed that the size of the unit is exhibited by the number of looms attached to the operating units. Data relating to the number of looms in each village is given in table 5.2.

Table - 5.2

Number of Looms in Each Village

Villages	No. of units	Looms	Average No. of looms
(1)	(2)	(3)	(4)
1. Villangudi	8	12	1.50
2. Arunthavapuram	7	17	2.48
3. Pulliakudi	8	15	1.87
4. Sendangada	12	29	2.42
5. Sembalur	3	5	1.55
6. Vandayar Irruppu	7	17	2.43
7. Karaimendarkottai	7	17	2.43
8. Pallakulam	8	20	2.50

(Contd.)

(1)	(2)	(3)	(4)
9. Madigai	9	22	2.40
10. Annalkuppan	2	6	3.00
11. Pudukottai	8	13	1.62
12. Thenpathi	7	17	2.43
13. Sendangudi	8	18	2.25
14. Coleroon	8	20	2.5
15. Kodikalpalayam	4	3	0.75
16. Maruthapattinam	10	19	1.90
17. Kongalancheri	6	7	1.16
18. Manjakollai	1	1	--
19. Paravacheri	2	1	0.5
20. Vaithinathampettai	7	15	2.14
21. Pendaravadi-T	5	8	1.60
22. Arieyapuram	5	8	1.6
23. Napilalkuppan	2	3	1.5
24. Ahalangun	9	18	2.0
25. Kidarangandan	1	1	
	154	312	2.03

It can be seen from Table 5.2 that there are a total of 312 looms in the sample units. This works out an average

of two looms per unit. It is only in Annaikuppam village that we find three looms per unit. A close analysis of the number of looms in the same villages indicates that 12 villages have less than two looms per unit, while the other 12 villages have more than two looms. This is due to the fact that wherever the units are operated as family units, the size is found to be low.

It may be noted from the same Table (5.2) that the maximum number of looms (29) exists in Sendangadu. Madigai comes second with 22 looms. Pallakulam and Coleroon with 20 looms each, come third. Maruthapattinam has 19 looms while Ahalangun and Sendangudi have 18. Arunthavapuram, Vandayar Irruppu, Karainceendarkottai and Thenpathi have 17 looms each while Pullikudi and Vaithinathampettai have 15 looms each. Pudukottai has 13 looms and Villangudi 12. Ten out of the 25 villages covered by the survey has less than 10 looms. Three villages, viz., Manjakollai, Paravacheri and Kidarangandan have only one loom each.

The average number of the loom per sample village works out to twelve. There are fifteen villages which have more looms than the average number of looms and ten villages have less than the average number.

Type of Ownership

In Thanjavur District mat weaving is practised as a cottage industry. It is owned by private individuals either as a family unit or as a co-operative unit. Among the 25 villages covered, 131 units are private units. Only 23 units are in the Co-operative Sector. The number of units and looms in the co-operative sector are furnished in Table 5.3.

Table - 5.3

Number of Units and Looms in the Co-operative Sector.

Village	Co-operative Units	
	<u>No. of units</u>	<u>No. of looms</u>
1. Villangudi	0	12
2. Vandayar Irruppa (Dormant Society)	7	17
3. Vilendrasamudram	8	18
	<u>23</u>	<u>47</u>

It may be observed from Table 5.3 that co-operative units exist only in 3 out of the 25 villages surveyed. This only confirms the fact that mat weaving is largely practised as a family profession.

Sanjay K. S.
10/10/19

Employment

Mat weaving as a cottage industry provides employment to family members. Predominantly scheduled castes and backward communities are engaged in the production of Korai mat weaving. Details of employment of the different communities classified as forward, backward, scheduled and muslims are furnished in Table 5.4

Table - 5.4**Details of Employment of the Different Communities**

Villages	No. of Families Employed			
	Forward	Backward	Scheduled	Muslims
	(1)	(2)	(3)	(4)
1. Villangudi		7		1
2. Arunthavapuram				7
3. Pulliakudi				—
4. Sendangedu				8
5. Sembalur				12
6. Vandayar Irruppu				7
7. Karaimondarkottai				7
8. Pallakulam				8
9. Nadiqai				9
10. Annaikuppam				2

(Contd.)

(1)	(2)	(3)	(4)	(5)
11. Pudukottai (Vaduvur)			8	
12. Thenpethi (Vaduvur)			7	
13. Sendangudi				8
14. Coleroon (Thaikkal)				8
15. Kodikalpelayam		2		2
16. Maruthapettinam		8		2
17. Kongalancheri		2		4
18. Manjakollai				1
19. Paravacheri				2
20. Vaithinathampettai		7		
21. Pandaravadi-T		5		
22. Araiypuram		5		
23. Mappillaikuppen		2	3	
24. Ahalangan	5	4		
25. Kidarangondan		1		
Total	5	43	79	27

It may be pointed out here that the units operated by the scheduled caste are found mainly in East Thanjavur while backward and muslims operated units are found in West Thanjavur. The number of families engaged in mat manufacturing classified on the basis of community is given in Table 5.5.

Table - 5.5

Community	No. of units employed
Forward	5
Backward	43
Scheduled	79
Muslims	27

It may be seen from Table 5.5 that 154 families are engaged in Korai mat manufacturing each having a separate unit. Of these scheduled caste families comes first (79), followed by backward (43), Muslims (27) and forward (5) community families. This indicates that there is community concentrations in Korai mat weaving. The larger concentration of scheduled caste family in Korai mat weaving, in the villages of Thanjavur is explained by the fact that they take this as part time and that of Muslims in Sendangudi as full time and that of backward community people in Orathanad area and Thiruvaiyaru take mat weaving as a family profession.

Data relating to sex-wise classification is given in Table - 5.6.

Table - 5.6**Sex-wise Classification of People Engaged in Korai Mat Weaving**

	Male	Female	Total
Scheduled	105 x_1	87 y_1	192 n_1
Backward	65 x_2	62 y_2	127 n_2
Forward	8 x_3	9 y_3	17 n_3
Muslim	30 x_4	34 y_4	64 n_4
Total	208	192	400

Mat weaving industry is one in which the different classes of people forward, backward and scheduled caste are engaged either as a full-time profession or as part-time profession to augment their income. It is interesting to examine whether there is any significant difference between the various classes of people with regard to the number of families engaged in such work. To analyse this point of differentiation between the classes, the 400 persons that were taken for investigation are classified according to the two qualitative characteristics :

- i) the classification on the basis of caste or class
such as forward, backward and scheduled
ii) classification on the basis of sex.

A 2 x 2 contingency table has been prepared. This table facilitates the examination whether there is any dependence of one of the characteristics on the other, namely whether more number of males or females are engaged in the mat weaving in a particular class than the other class. On analysis it has been found that the χ^2 value calculated is 1.428 which is smaller than the χ^2 5% value with (3,1) degrees of freedom. Hence it can be concluded that there is no dependence between these two characteristics, that is the number of males and females working in different classes is independent of the class or type of classification such as forward, backward or scheduled. The calculation is given below :

Males

$$\begin{aligned}
 x_1 &= 105 & n_1 &= 192 \\
 p_1 &= \frac{x_1}{n} = \frac{105}{192} = 0.546 \\
 p_2 &= \frac{x_2}{F_2} = \frac{65}{127} = 0.5118 \\
 p_3 &= \frac{x_3}{n_3} = \frac{8}{17} = 0.470 \\
 p_4 &= \frac{x_4}{n_4} = \frac{30}{64} = 0.468
 \end{aligned}$$

Females

$$\begin{aligned}
 p_1 &= \frac{y_1}{n_1} = \frac{87}{192} = 0.453 \\
 p_2 &= \frac{y_2}{n_2} = \frac{62}{127} = 0.488 \\
 p_3 &= \frac{y_3}{F_3} = \frac{9}{17} = 0.529 \\
 p &= \frac{y_4}{n_4} = \frac{34}{64} = 0.531
 \end{aligned}$$

Expected Values

	E_{11}	E_{22}	$E_{11} = \frac{208 \times 192}{400} = 99.84$
Scheduled	99.84	92.16	
	E_{12}	E_{22}	$E_{12} = \frac{208 \times 127}{400} = 66.04$
Backward	66.04	60.96	
	E_{13}	E_{23}	$E_{13} = \frac{208 \times 17}{400} = 8.84$
Forward	8.84	8.16	
	E_{14}	E_{24}	$E_{14} = \frac{208 \times 64}{400} = 33.28$
Muslims	33.28	30.72	
			$E_{21} = \frac{192 \times 192}{400} = 92.16$
			$E_{22} = \frac{192 \times 127}{400} = 60.96$
			$E_{23} = \frac{192 \times 17}{400} = 8.16$
			$E_{24} = \frac{192 \times 64}{400} = 30.72$

$$\begin{aligned}
 \chi^2 &= \frac{(5.16)^2}{99.84} + \frac{(5.16)^2}{92.16} + \frac{(1.04)^2}{66.04} + \frac{(1.04)^2}{60.96} \\
 &+ \frac{(0.940)^2}{8.840} + \frac{(0.840)^2}{8.160} + \frac{(3.28)^2}{33.28} + \frac{(3.28)^2}{30.72} \\
 &= 0.2667 + 0.2889 + 0.0164 + 0.0164 + 0.0798 \\
 &\quad + 0.0864 + 0.3233 + 0.3502 \\
 &= 1.4281 \quad (3.1) \quad 0.05 \quad = 7.815 \text{ not significant}
 \end{aligned}$$

Proportion of males to the total workers for each of the class :

	n_i	x_i	p_i
Scheduled	$= \frac{105}{192} = 105$	192	$= p_1 = 0.55$
Backward	$= \frac{65}{127} = 65$	127	$= p_2 = 0.51$
Forward	$= \frac{8}{17} = 8$	17	$= p_3 = 0.47$
Muslims	$= \frac{30}{64} = 30$	64	$= p_4 = 0.47$

From the survey data we have also examined the equality of proportion of male or female workers from the various classes. For this purpose four classes of people viz., the forward, backward, scheduled and the muslims are taken into consideration. Muslims are taken as a separate class since it is usually found that more of Muslims are engaged in this industry. We set the hypothesis that the proportion of males is equal in all the four classes defined.¹

The hypothesis is that $H_0 : p_1 = p_2 = p_3 = p_4$ where
 p_1 = proportion of males to total workers in scheduled
 p_2 = proportion of males to total workers in backward class
 p_3 = proportion of males to total workers in forward and
 p_4 = proportion of males to total workers in muslims.

1. To test the stated hypothesis we use the test for the equality of k sample proportions as defined in page 307 of Handbook Methods of Applied Statistics by Chakravarti, Laha and Rog, (John Wiley & Sons)

To test the hypothesis we find

$$T = \frac{\sum_{i=1}^k n_i p_i^2 - np^2}{p(1-p)} \quad \text{where}$$

$$p_i = \frac{x_i}{n_i} \quad \text{and} \quad p = \frac{\sum x_i}{\sum n_i} = x/n$$

T follows χ^2 distribution with (k-1) degree of freedom.

Using table

$$T = 3.405$$

$$\chi_{3,1}^2 \text{ at 3 d.f.} = 7.815$$

$$T < \chi^2 \text{ at 3 d.f.}$$

Hence we accept the hypothesis H_0 , which implies that the proportions of males from the various classes engaged in the industry are equal.

Number of Persons Employed

Since mat weaving is operated by family members, both men and women are employed in it. Data relating to the number of persons employed in the selected establishments classified as males and females are tabulated below : (Table 5.7)

Table - 5.7

**Number of Persons Employed (Male & Female) in the Surveyed
Units**

Villages	Number of Persons Employed					
	Males	%	Females	%	Total	%
Sample Villages (25)	208	52	192	48	400	13.12

It is apparent from Table 5.7 that there are 400 members employed in sample mat manufacturing units. Of these, 208 are males and 192 females. The ratio of males to females works out to be 13 : 12.

Data relating to the number of persons employed per establishment is furnished in Table 5.8.

Table - 5.8

Villages	No. of persons employed per establishment						
	One	Two	Three	Four	Five	Six	Seven
	(27)	(58)	(33)	(23)	(5)	(2)	(2)
1. Villangudi		2	3				
2. Arunthavapuram	1	6	1				
3. Pulliakudi	1	4	2				
4. Sendangadu	1	6	2	3			

(Contd.)

Villages	No. of persons employed per establishm					
	One	Two	Three	Four	Five	Six
5. Sambalur	1	2				
6. Vandayar Irruppu	2	2	1	2		
7. Karaineendarkottai	1	2	3	1		
8. Pallakulam	1	4	1	1	1	
9. Madigai	2	3	2	2		
10. Annaikuppan	1	1				
11. Pudukottai (Vaduvur)	2	2	2	2		
12. Thenpathi (Vaduvur)	-	2	2	3		
13. Sendangudi	-	3	3	2		
14. Coleroon	-	2	6			
15. Kodikalpalayam	1	3				
16. Maruthapattinam	6	2				
17. Kongalancheri	2	4				
18. Manjakollai	1					
19. Paravacheri	2					
20. Vaithianathampettai		3	2			
21. Pandarevedi-T		2	1	1	1	
22. Araiyapurem		2	1	1	1	
23. Mappillaiakuppan			1	1	1	
24. Ahalangun	1	1	3	2	1	
25. Kidarangondan			1			

The frequency distribution of the number of persons employed per establishment is given in Table 5.9.

Table - 5.9

Frequency Distribution of the Number of Persons Employed per Unit

No. of persons employed (x)	No. of units (f)	x.f	x ² f
1	27	27	27
2	56	116	232
3	33	99	297
4	23	92	368
5	5	25	125
6	2	12	24
7	2	14	28
	<u>150</u>	<u>385</u>	<u>1101</u>

$$\text{Mean} = \bar{x} = \frac{385}{150} = 2.57$$

$$\begin{aligned} \text{S.D. } \sigma_x &= \sqrt{7.34} = 2.71 \\ &= \sqrt{0.76} \\ &= 0.86 \end{aligned}$$

This implies that an average 3 persons are employed from each family with variance 0.86.

An examination of the classwise classification of males and females will indicate the participation of the sexes. The relevant data are given in Table 5.10.

Table - 5.10

Sex-wise Participation

Villages (1)	Work force participation							
	Forward		Backward		Scheduled		Muslims	
	M (2)	F (3)	M (4)	F (5)	M (6)	F (7)	M (8)	F (9)
1. Villengudi			17	10	1	1		
2. Arunthavapuram					8	8		
3. Pullikudi					9	9		
4. Sendangedu					16	15		
5. Sambalur					4	3		
6. Vandayar Irruppu					10	8		
7. Karainceendarkottai					10	8		
8. Pallakulam					13	7		
9. Madigai					12	8		
10. Annaikeppan					1	1		
11. Pudukottai					9	8		
12. Thenpathi					11	11		
13. Sendangudi							11	13
14. Coleroon							11	11

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
15. Maruthapattinam			4	4			2	1
16. Kodikalpalayan			2	2			1	2
17. Kongalancheri			1	1				
18. Manjakollai							3	5
19. Paravacheri							2	-
20. Vaithinethampettai			17	12			-	2
21. Pandaravadi - T			7	9				
22. Araiypuram			3	12				
23. Mappilaikuppam			4	3				
24. Ahalangan	8	9	9	8				
25. Kidarengondan			1	1				
	8	9	65	62	104	87	30	24

From Table 5.10 it is clear that Harijan participation in Korai mat weaving is larger and the people belonged to Forward community is smaller. Another point to be noted is that the male workers in Harijan and Backward communities are higher than the female workers whereas female workers are higher than male workers in the Muslim and the Forward communities due to stay-at-home attitude and social prestige and customs respectively.

The number of men and women employed per unit and per loom will give some idea about the economics of labour force participation. Such details are presented in Table 5.11.

Table - 5.11

Villages (1)	Average No. of persons employed per unit and per loom					
	Average No. of persons employed per unit			Average No. of persons employed per loom		
	Units (2)	Male (3)	Female (4)	Looms (5)	Male (6)	Female (7)
1. Villangudi	2	1.43	1.43	12	1.47	0.47
2. Arunthavapuram	7	1.93	1.13	17	0.60	0.60
3. Pullikudi	8	1.12	1.12	15	1.60	0.60
4. Sendangadu	12	1.33	1.25	29	1.55	0.52
5. Sembalur	3	1.33	1.00	5	1.8	0.60
6. Vandayar Irruppu	7	1.43	1.43	17	1.58	0.47
7. Karaimendarkottai	7	1.43	1.43	17	1.58	0.47
8. Pallakulam	8	1.62	0.87	20	0.65	0.35
9. Madigai	9	1.33	0.98	22	0.59	0.31
10. Annaikuppam	2	1.00	0.50	6	0.03	1.16
11. Pudukottai	8	1.25	1.00	13	0.69	0.61
12. Thenpathi	7	1.57	1.57	17	0.64	0.64
13. Sendangudi	8	1.37	1.62	18	0.61	0.72

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
14. Coleroon	8	1.37	1.37	20	0.55	0.55
15. Kodikalpalayam	4	0.75	1.00	3	1.00	1.33
16. Maruthapattinam	10	0.60	0.50	19	0.31	0.26
17. Kongalancheri	6	0.66	1.00	7	1.00	1.33
18. Manjakollei	1	1.00	--	1	--	1.00
19. Paravacheri	2	--	1.00	1	--	0.50
20. Vaithinathampettai	7	2.44	1.71	15	1.33	0.80
21. Pandaravadi-T	5	1.40	1.80	8	1.87	1.25
22. Araiypuram	5	0.60	2.40	8	0.37	1.50
23. Mappilaikuppam	2	2.00	1.50	3	1.33	1.00
24. Ahalangam	9	1.88	1.88	18	0.94	0.94
25. Kidarangondan	1			1		
Total	148			312		

It may be observed from Table 5.12 that number of males and females employed are equal in the case of scheduled caste and muslims. It is only with reference to the backward class we notice large variations. Since the standard deviation observed in the case is the largest when compared with other categories as seen from the table 5.14.

Labour Force Utilisation

The duration of employment varies in different establishments according to size of the unit and the variety of mats produced. Since Farm employment does not give full-time occupation to the farm workers they take to koral mat weaving during off season. Data relating to the number of days employed in mat weaving in the different villages are tabulated and presented in Table 5.12.

Labour force utilisation is an important aspect of the study of the economics of mat weaving industry. The manner and the duration of employment of males and females belonging to various classes will throw some light on the extent of labour utilisation in this industry and how it helps the unemployed as well as the under employed. The distribution pattern of employment among the various classes will also help us to compare the different classes. For this purpose, for each class viz., the forward, backward, scheduled and the muslims the frequency distribution of the number of days of employment (x) and the number of workers (f) is formed from the data collected for the different classes of people of the sample villages. The table 5.13 gives the mean and standard duration of the number of days work for the workers of the different classes. The table has been computed on the basis of off season work people have taken.

P.T.O

It is inferred from Table 5.12 and 5.13 that even though four different sects of people namely Forward, Backward, Scheduled caste and Muslims participate in the profession, the number of people engaged in a unit is different in different communities. In some cases more female workers are employed than the male workers. Only in Ahalangun forward community people engage in the profession. In a unit more female members are employed than the male members. Among the twenty five villages, in eleven villages scheduled caste people do the work. In almost all the twelve villages the participation of male and female members are equal. In nine villages backward community people are engaged. Among the nine in three villages the participation of male and female are equal, in four villages more male members than the female members and in two villages more female members are participating than the male members. In seven villages Muslim people engage in mat weaving. Among seven villages, in four villages more female members are doing this. Mat weaving and in other villages both the male and female are more or less equally participating in this work.

Tables 5.14 to 5.17 present the mean and standard deviation of working days of different classes of people and Table 5.18 presents the consolidated statement.

Table-5.14

Males and Females, Backward

x_1	f_1	mid x_1	fixi	x_1^2	$x_1^2 f_1$
0 - 2	5	1	5	1	5
3 - 5	5	4	20	16	80
6 - 8	2	7	14	49	98
9 - 11	3	10	30	100	300
12 - 14	2	13	26	169	338
15 - 17	2	16	32	256	512
	19		127		1333

Calculated : mean $\bar{x} = \frac{\sum x_1 f_1}{N}$

S.D. $= \sqrt{\frac{\sum x_1^2 f_1}{N} - (\bar{x})^2}$

$\bar{x} = \frac{127}{19} = 6.684$

S.D $= \sqrt{\frac{1333}{19} - (6.684)^2}$

$= \sqrt{70.1578 - 44.6759}$

$= \sqrt{25.4819}$

$= 5.048$

Backward $= 6.684$

S.D $= 5.048$

Table - 5.15

Males and Females, Forward

X	f_1	Mid x_1	$f_1 x_1$	x_1^2	$x_1^2 f_1$
0 - 2	0	1	0	1	0
3 - 5	0	4	0	16	0
6 - 8	1	7	7	49	49
9 - 11	1	10	10	100	100
12 - 14	0	13	0	169	0
15 - 17	0	16	0	256	0
	2		17		149

$$\text{Mean } \bar{X} = \frac{17}{2} = 8.5$$

$$\text{S.D.} = \sqrt{\frac{149}{2} - (8.5)^2}$$

$$= \sqrt{74.5 - 72.25}$$

$$= \sqrt{2.25}$$

$$= 1.5$$

$$\text{S.D} = 1.5$$

$$\bar{X} = 8.5$$

Table - 5.16

Males and Females, Scheduled

f_1	Mid x_1	$f_1 x_1$	x_1^2	$x_1^2 f_1$
4	1	4	1	4
3	4	12	16	48
6	7	42	49	294
7	10	70	100	700
2	13	26	169	338
2	16	32	256	512
24		186		1896

$$\begin{aligned}
 \text{Mean } \bar{x} &= \frac{186}{24} = 7.75 \\
 &= \sqrt{\frac{1896}{24} - (7.75)^2} \\
 &= \sqrt{79 - 60.0625} \\
 &= \sqrt{18.9375} \\
 &= 4.3517 \\
 \text{Scheduled Mean} &= 7.75 \\
 \text{S.D} &= 4.3517
 \end{aligned}$$

Table - 5.17

Males and Females, Muslims

X	f_1	Mid x_1	$f_1 x_1$	x_1^2	$x_1^2 f_1$
0 - 2	6	1	6	1	6
3 - 5	2	4	8	16	32
6 - 8	0	7	0	49	0
9 - 11	3	10	30	100	300
12 - 14	1	13	13	169	169
15 - 17	0	16	0	256	0
	12		57		507

$$\text{Mean } \bar{x} = \frac{57}{12} = 4.75$$

$$\text{S.D.} = \sqrt{\frac{507}{12} - (4.75)^2}$$

$$= \sqrt{42.25 - 22.5625}$$

$$= \sqrt{19.6875}$$

$$= 4.437$$

$$\bar{x} = 4.75$$

$$\text{S.D} = 4.437$$

Table - 5.18

Class of people	Mean Number of working days.	S.D.
1. Forward	8.5	1.5
2. Backward	6.69	3.05
3. Scheduled	7.75	4.35
4. Muslims	4.75	4.44

From table 5.18 the following points emerge :

1) The forward class workers take to mat weaving for more number of days during off season on the average. The s.d. is also the smallest for this group which explains less of variations.

2) The next highest number of days on the average is for scheduled caste people with s.d. of 4.35 days which shows that from individual to individual the variation in the number of days of employment is higher.

3) The lowest number of days of employment is for muslims with 3.05 days of standard deviation. This shows that they take off season work only on a smaller scale and individual variations are also found to be high.

Charges

The charges for different process of manufacture in the surveyed villages for different counts of mats are given in Table 5.19.

It may be observed from table 5.19 that details of wages for different processes are available only for five villages. This is due to the fact that in the other villages mat manufacturing is done purely as a family unit and no outside labourers are employed. Hence, details of different charges are not available.

Among the five villages, Villangudi is having co-operative units while others are operated by middlemen-cum-merchants. It is found that the charges for all the process are the highest in Ariyapuram while it is the lowest in the co-operative units in Villangudi. The higher charges in Ariyapuram is explained by the fact that because of full time agricultural work, master weavers are compelled to pay high wages to retain the labourer in the mat weaving units.

Table 5.20 gives information regarding charges for binding and cutting, polishing, dyeing and knotting the different varieties of koral mats.

From Table 5.20 it can be seen that compared to other villages charges are the highest in Ariyapuram village for all types of operations and minimum in the case of Villangudi village.

CHAPTER - VI

ANALYSIS OF CAPITAL AND COST STRUCTURE

In Chapter-V we discussed the socio-economic aspects of Korai mat production. This Chapter analyses the capital and cost structure of Korai mat weaving units.

Capital is the life blood of an enterprise. It may be noted that the availability of capital and the structure of capital influence the success or failure of an enterprise. Capital required for an enterprise is classified under two heads, viz., fixed capital and working capital.

Fixed Capital

Generally, tools and equipments are the only kind of fixed capital required for a mat weaving establishment. Building often does not figure as an item of fixed capital in this craft. This is because in majority of cases a corner of the residential house is used to house the loom required for mat weaving. The Harijans work in the open place or in the shades of trees. Hence, the fixed capital of the mat establishments comprise only tools and equipments. Data relating to the value

of looms, tools and equipments possessed by mat weavers covered by the sample units are furnished in Table 6.1.

Table - 6.1

Value of Looms, Tools and Equipments Possessed by Korai Mat Weaving

Villages	Value of looms	Value of Tools & Equipments	No. of looms	Total	Average value of capital assets
	Rs.	Rs.		Rs.	Rs.
1. Villangudi	720	60	12	780	65
2. Arunthavapuram	850	51	17	901	53
3. Pullikudi	675	45	15	720	48
4. Sendangadu	1450	116	29	1560	53
5. Sembalur	250	20	5	270	54
6. Vandayar Irruppu	825	81	17	906	53
7. Karsimeendarkottai	710	70	17	781	45
8. Pallakulam	900	60	20	960	48
9. Madigai	990	66	22	1056	48
10. Annaikuppan	300	24	6	324	54
11. Pudukottai (Vaduvur)	615	52	13	667	51
12. Thanpathi (")	850	51	17	901	53
13. Sendangudi	1320	90	18	1410	78
14. Coleroon(Thaikkal)	1100	100	20	1200	60
15. Kodikalpalayan	120	12	3	132	44
16. Maruthapattinam	1355	76	19	1431	75
17. Kongalancheri	315	21	7	336	48
18. Manjakollai	45	5	1	50	50
19. Parevcherri	45	6	1	51	51

(Contd.)

Villages	Value of looms Rs.	Value of Tools & Equipments Rs.	No. of looms	Total Rs.	Average value of capital assets Rs.
20. Vaithinathampettai	750	60	15	810	54
21. Pandarevadi - T	360	32	8	392	49
22. Araiyapuram	400	40	8	440	55
23. Mapilaikuppan	135	15	3	150	50
24. Ahalangan	936	72	18	1008	56
25. Kidarangandan	46	4	1	50	50
	16062	1222	312	17286	1345

From table 6.1 it can be noted that the total value of tools and equipments of the sample units amount to Rs.17,286. This works out an average value of tools and equipments per loom at Rs.55.40. The value of looms is the biggest item which accounts for Rs.16,062. Value of tools and equipments constitute only Rs.1230. The average value of loom works out at Rs.51.46 and that of tools and equipments at only Rs.3.94.

The average value of capital assets is found to be the highest at Sendangudi (Rs.78). Maruthapattinam comes next (Rs.75). Out of the 25 villages covered, 18 villages have

tools and equipments above Rs.50 and 7 villages having tools and equipments below Rs.50.

The average fixed capital per loom and per different classes of establishments show the variations in the size of establishment. The relevant data for this are tabulated and presented in Table 6.2.

Table - 6.2

Average Fixed Capital Per Loom of Different Classes of People

Villages	Average fixed capital per unit			
	Forward	Backward	Scheduled	Muslims
(1)	(2)	(3)	(4)	(5)
1. Villengudi		682		97
2. Arunthevapuram				901
3. Pullikkudi				720
4. Sendangsdu				1560
5. Sambalur				270
6. Vandayar Irruppu				906
7. Karaimendarkottai				781
8. Pallakulam				960
9. Madigai				1056
10. Anneluppan				324

(Contd.)

(1)	(2)	(3)	(4)	(5)
11. Pudukottai (Vaduvur)			667	
12. Thanpathi (")			901	
13. Sendangudi				1410
14. Coleroon (Theikkai)				1200
15. Kodikalpalayam		66		66
16. Maruthapattinam		1144		286
17. Kongsalancherri		112		224
18. Manjakollai				50
19. Paravacherri				51
20. Veithinathampettai		810		
21. Pandarevedi - T		392		
22. Araiypuram		440		
23. Mappilaikuppam		150		
24. Ahalangun	560	448		
25. Kidarangondan		50		

Table 6.2 reveals that the average value of fixed capital is the highest in the units operated by scheduled castes (Rs.76). It is closely followed by Muslims (Rs.462). In the case of unit operated by backward class the average value of fixed capital comes only to Rs.429.

Cost Structure (Working Capital)

The working capital required for the mat weaving establishment consists of (1) cost of Korai (2) processing of Korai (3) cost of dyes (4) cost of fuel (5) cost incurred in preparing the warf (6) wages or salaries paid (7) rent for building and lights (8) depreciation and replacement charges (9) transport cost (10) charges of establishment (11) price of cotton yarn.

Data relating to the total cost of production of Korai mats in the surveyed villages are tabulated and presented in Table 6.3. The average cost of production of the working enterprises is given in table 6.4.

Table - 6.3Total Cost of Production of Korai Mats in Different Villages

<u>Villages</u>	<u>Total cost (Rs.)</u>
1. Villangudi	16,928
2. Arunthavepuram	12,583
3. Pullikudi	11,951
4. Sendangadu	15,722
5. Sambalur	5,599
6. Vandayar Irruppa	14,913

(Contd.)

Villages	Total Cost (Rs.)
7. Karaimendarkottai	12,867
8. Pallakulam	14,647
9. Madigai	16,574
10. Annaikuppam	4,342
11. Pudukottai	14,759
12. Thenpathi	13,565
13. Sendangudi	24,832
14. Coleroon	26,249
15. Kodikalpalayam	7,745
16. Kongalancherri	21,579
17. Maruthapattinam	17,230
18. Manjakollai	2,395
19. Paravacheri	3,525
20. Veithinathampettai	20,876
21. Pandarevadi-T	7,097
22. Arisayapuram	8,033
23. Mappilaikuppam	4,147
24. Ahalangan	11,107
25. Kidaramondan	1,720

This table analyses the total cost of production in the sample villages. Even though all the 25 villages are

engaged in the mat weaving, the volume of work turned out by these villages are different. This can be easily seen from the table. The total cost in Kidarangondan is Rs.1,720/- the minimum among the sample villages and the total cost in Coleroon is Rs.26,248 the maximum. With respect to total cost the other villages lie between these two villages. The total cost of production of different villages vary because of many factors. Nature of employment - part-time or full-time, number of persons engaged in the mat weaving industry, proximity to market, nature of the factor supplies and the nature of the occupation-hereditary or non-hereditary are some of the factors worth mentioning in this respect.

Table - 6.4

Average Cost of Production of Korai Mats in the Surveyed Villages

Villages	Average Cost (Rs.)
1. Villangudi	3.23
2. Arunthavapuram	2.65
3. Pullikudi	2.36
4. Sendangadu	3.80
5. Sambalur	2.48
6. Vandayar Irruppu	2.90

(Contd.)

Villages	Average Cost (Rs.)
7. Karaimeendarkottai	2.64
8. Pallakulam	2.95
9. Madigai	3.18
10. Annaikuppam	3.14
11. Pudukottai (Vaduvur)	3.57
12. Thenpathi (Vaduvur)	3.68
13. Sendangudi	6.85
14. Coleroon	4.63
15. Kodikalpalayam	3.09
16. Maruthapettinam	2.40
17. Kongalancheri	2.53
18. Manjakollai	6.38
19. Paravacheri	2.61
20. Vaithinathampettai	4.69
21. Pandarevadi-T	2.67
22. Raiaiyapuram	2.97
23. Mapillaikuppam	3.91
24. Ahalangun	1.65
25. Kidarangonden	4.19

Table 6.4 indicates that the average cost of mat is different in different villages. Usually villages where the coarse variety alone is produced, the average cost is lower and in the villages where the superfine alone is produced, the average cost is the maximum. Among the sample villages, the minimum average cost is Rs.1.65 in Ahalangun and the maximum average cost is Rs.6.85 in Sendangudi.

Analysis of the cost structure in terms of per loom and per unit will indicate a clear picture of the variations in the cost of manufacture of mats. This analysis is attempted in table 6.5.

Table - 6.5

Per Loom and Per Unit Cost

Villages	Per Loom Rs.	Per Unit Rs.
1. Villangudi	1410.66	2116.00
2. Arunthavapuram	740.17	1797.57
3. Pullikudi	796.73	1493.67
4. Sendangadu	542.13	1310.16
5. Sambalur	1119.80	1866.33
6. Vandayar Irruppu	877.23	2130.42

(Contd.)

Villages	Per Loom Rs.	Per Unit Rs.
7. Karaimeendarkottai	756.88	1838.14
8. Pallakulam	732.35	1830.87
9. Madigai	753.36	1841.55
10. Annaikuppam	723.66	2171.00
11. Pudukottai (Vaduvur)	1135.30	1844.87
12. Thenpathi	797.94	1937.85
13. Sendangudi	1379.55	3104.00
14. Coleroon	1312.45	3281.12
15. Kodikalpalayam	2581.66	1936.25
16. Maruthapattinam	906.84	1723.00
17. Kongalancheri	3082.71	3596.50
18. Manjakollai	2395.00	2395.00
19. Paravecheri	3525.00	1762.50
20. Vaithinathampettai	1391.73	2982.28
21. Pandarevedai - T	887.12	1419.40
22. Ariyapuram	1004.00	1606.40
23. Mappilaikuppam	1382.33	2073.50
24. Ahalangun	617.05	1234.11
25. Kiderankondan	1720.00	1720.00

From Table 6.5 it can be seen that the average cost per loom and units help us to know the actual cost of production and efficiency of the mat weavers in producing mats.

This also depends upon the variety of mat produced by the units. The per loom cost is maximum in Kongalancheri where it amounts to Rs. 3,082.71 and minimum in Sendangadu where it is only Rs. 542.13. Similarly the average cost is maximum in Kongalancheri with Rs. 3,596.50 and minimum in Ahalangan with Rs. 1,234.11.

The study of cost of Korai mat manufacture may also be made in terms of the varieties of mats produced viz., coarse, medium and fine varieties. Data relating to average cost per mat of the three different varieties is given in Table 6.6.

Table - 6.6

Average Cost Per Different Varieties of Mats

Villages (1)	Average Cost (Rs.)		
	Coarse (2)	Medium (3)	Superfine (4)
1. Villangudi	1.43	2.84	15.36
2. Arunthavapuram	1.97	3.21	13.00
3. Pullikudi	1.11	4.44	12.57
4. Sendangadu	3.76	4.97	
5. Sambalur	1.85	2.97	
6. Vandayar Irruppa	1.53	4.42	21.05

(Contd.)

(1)	(2)	(3)	(4)
7. Karaimendarkottai	1.56	3.90	17.66
8. Pallakulam	1.50	8.69	
9. Madigai	1.95	7.00	
10. Annaikuppam	1.54	7.36	
11. Pudukottai (Vaduvur)	1.74	5.95	
12. Thenpathi	1.82	6.13	
13. Sendangudi	.22	0.43	15.98
14. Coleroon	1.67	5.06	9.36
15. Kodikalpalayam	1.78	2.05	14.17
16. Maruthapattinam	1.67	1.90	14.78
17. Kongalancheri	1.73	7.03	16.02
18. Manjakollai	6.08	7.20	
19. Paravecheri	1.66	3.98	
20. Vaithinathampettai	1.83	6.33	13.33
21. Pandaravadi - T	1.65	4.52	
22. Ariyaspuram	0.77	1.40	13.33
23. Mappilakuppam	1.71	7.53	
24. Ahalangan	1.74	1.66	1.45
25. Kidarangondan	3.98	4.31	

The cost per mat is different in different villages for different varieties due to the availability or nonavailability

of raw materials locally, experienced labour and use of aloe fibre. In some villages like Araiyaipurem and Sendangudi people prepare a fibre known as aloe fibre from some plants and this is used instead of cotton thread in coarse and medium varieties which reduces the cost of production. Due to this the cost of production of these two varieties namely coarse and medium are low in Sendangudi. Usually these villages are not producing superfine quality mats. Even if they produce, the cost of production is comparatively higher. Among the sample villages, some villages like Manjakollai started the mat weaving only recently. Inexperienced weavers and non-availability of raw material in the neighbourhood increases the cost very much.

So far we have analysed the different categories of costs that a producer engaged in Korai mat weaving has to incur. We know that each component of cost does not exert equal influence over the overall production cost. In order to find out the extent of influence exerted by each component of cost over the total cost we make use of partial and multiple correlation analysis. To facilitate the analysis the various components of the production costs are classified as $X_1, X_2, X_3, X_4, \text{ etc.}$

Where X_1 = cost of basic raw material (Korai)

X_2 = the cost due to the processing of Korai before it is used for that mat weaving.

X_3 = the cost of dyeing which includes the cost of dyestuff, fuel used for the heating Korai; depreciations of tools in the process of dyeing etc.

X_4 = Other costs which include the cost of transport cost, cost of other materials such as cotton etc., used in the production, wages etc.

After obtaining the simple correlation co-efficient, the R matrix is formed and the inverse R^{-1} has been obtained by computerisation. From this inverse the following values of the partial and multiple correlation co-efficient are obtained.

Partial Correlation Co-efficient

$r_{51.234}$	=	0.92
$r_{52.134}$	=	0.122
$r_{53.124}$	=	0.179
$r_{54.123}$	=	0.37

From this it is understood that the cost of production is mainly influenced by the cost of Korai, a high partial correlation coefficient explains that the cost of mat mainly depends on the cost of raw material via Korai; and other costs X_2, X_3, X_4, X_5 are less significant.

The partial correlation co-efficient between total cost and the component X_4 is again more than the other correlation co-efficients. This component exercise a greater amount influence on the cost as it includes the cost of cotton, thread, for weaving, the cost of transportation.

The multiple correlation co-efficient $R_5 (1234)$ which explains maximum correlation exercised by other variables X_1, X_2, X_3, X_4 on X_5 is calculated by the formula

$$R_5 (1234) = \sqrt{1 - \frac{\Delta_{55}}{\Delta_{55}}}$$

Where R denoted the correlation matrix. From the inverse of the correlation matrix the value computed for

$$R_5 (1234) = 0.99$$

In the total cost of mat the raw material cost (X_1) is more than any other material used in the production of the mat. Since this is a cottage industry and raw material is more vital in production, the correlation co-efficient

is.92. Next to the raw material, cost of transportation and cost of thread (X_4) influences much in the total cost. This is clearly explained by the partial correlation coefficient .37.

The other two components in the cost of production X_2 processing of Koral and X_3 cost of dyeing do not influence much in the cost of production. These are revealed by the low correlation coefficients .122 and .179 respectively. Usually family labourers are used in the processing of Koral and dyeing, the cost of these works and expenses are meagre.

In the cost of production X_1 , X_2 , X_3 and X_4 play a dominant role and the multiple correlation coefficient is .99. Thus the total cost is determined by only the four variables.

Table - 6.7

Correlation between the cost of raw materials (x_1) and transport and other charges put together (x_2)

Village No.	x_1	x_2
1.	7746	2032
2.	6462.5	2238.19
3.	6025	2221.6
4.	6100	3529.4
5.	3425.25	635
6.	7372.75	2834.75
7.	6202.5	2596.25
8.	6169.5	3193.3
9.	10092.25	3150.25
10.	2948.25	767.5
11.	9721.5	2295.75
12.	7912.5	2280.5
13.	14342.75	3458.3
14.	16568	3006.6
15.	4872.5	1785
16.	10720.75	2710
17.	9756	1599.75
18.	1492	325
19.	2177	705
20.	12552.75	3042
21.	3472.5	1937
22.	4208.75	2142
23.	3491.25	737
24.	4865	3192
25.	851.25	310

Standard deviation of x_1 = 3992.76

Standard deviation of x_2 = 1011.59

Covariance of x and y = 2808906.39

Correlation coefficient between x and y = 0.7

There is almost a perfect correlation between x_1 and x_2 .

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Table 2. 6a

Correlation between the number of looms and average profit

Number	Number of looms X	Average profit Y
1.	12	878
2.	17	873
3.	15	1052
4.	29	394
5.	8	1880
6.	17	1041
7.	17	1046
8.	20	579
9.	22	521
10.	6	946
11.	13	823
12.	17	514
13.	18	2030
14.	20	2126
15.	3	3885
16.	19	1537
17.	7	2703
18.	1	975
19.	1	4825
20.	15	128
22.	8	969
23.	8	1783
24.	3	536
25.	18	3248

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$$\bar{x} = \frac{\sum x}{n}, \quad \bar{y} = \frac{\sum y}{n}$$

$$\sigma_x = \sqrt{\frac{\sum x^2}{n} - (\bar{x})^2}$$

$$\sigma_y = \sqrt{\frac{\sum y^2}{n} - (\bar{y})^2}$$

$$\sigma_{xy} = \sqrt{\frac{\sum xy}{n} - (\bar{xy})^2}$$

$$r = \frac{\sigma_{xy}}{\sigma_x \sigma_y}$$

Input values of X

12.0000, 17.0000, 15.0000, 28.9999, 5.0000, 17.0000, 17.0000,
20.0000, 22.0000, 6.0000, 13.0000, 17.0000, 18.0000, 20.0000,
3.0000, 19.0000, 7.0000, 1.0000, 1.0000, 15.0000, 8.0000,
8.0000, 18.0000, 1.0000.

Input values of Y

877.9989, 872.9989, 1051.9991, 293.9994, 1879.9969,
1040.9995, 1045.9996, 578.9989, 520.9994, 545.9994,
822.9989, 822.9989, 513.9944, 2029.9985.

974.9987, 4824.9921, 129.0000, 968.9989,
1782.9969, 535.9989, 3247.9969, 2434.9995.

X - Mean = 12.679983

Y - Mean = 1449.077600

S.D. X = 7.531910

S.D. Y = 1139.351800

Correlation = - .380883

It is worthwhile to investigate the nature of the variation in Average profit per loom as the number is increased. It is found that the profit per machine on the average would tend to decrease, as the number of machines increases. The same phenomenon is observed in the case of number of looms (n) and the average profit per loom (y). The simple correlation co-efficient between x and y is observed to be = - 0.38 which means that the average profit declines as the number of looms is increased. It can be interpreted from this that the maintenance cost increases at an increasing rate as the number of looms increases. Therefore, the increase in the number of looms tends to decrease the marginal returns.

CHAPTER - VII

OUTPUT AND PROFIT

After discussing the cost aspect we now propose to discuss the profit aspect of Korai mat weaving. This is done with reference to the different varieties of Korai mats produced.

It may be pointed out here that the quality of Korai mats improves with the increase in the number of warp threads per foot. The number of warp thread depends on the eye-lets in the plank used, through which passess the threads. The plank contains the eye-lets on the following order.

Eyelets per foot :- 16, 18, 20, 22, 24, 26, 28 and 40.

The mats which have forty warp threads per foot are superior mats. Usually more than forty threads are not used per foot. The more the threads the more the risk of the Korai breaking and the warp threads shaping. Hence the worker makes a choice about the perforated plank, after taking into consideration the complication of the design to be made in the mat and strength of the Korai.

Not only the number of warp threads but the number of threads in the eyelet (single or double thread) also determine the quality of the Korai mat.

Mats produced with different designs have got various names. Example check pattern mats, line mats, flower mats etc. Mats produced for particular purposes may be categorised as follows:-

Single Mats : Single mats for the use of a single person and for use in carts.

Double Mats : Double mats with a breadth of 51".

Children Mats : Children mats for the use of children.

Fest Mats : Long and narrow mats of breadth 20" and length ranging from 12" to 36". In the production of this kind of mat, 6" length pieces are first produced. Then they are attached together to give the required length.

Meal Mats : Square in size, intended for the use of a single person when taking meals.

Prayer Mats : Slightly larger than meal mats, but of square dimensions are produced for export to northern India.

Marriage Mats : Marriage mats with exquisite designs to be offered as presents during marriages.

Full white : This mat is woven in higher counts. It possesses the natural colour of Korai grass, having only two or three slender coloured lines on both sides dyed in fast colours. This mat attracts the eye of the discerning and connoisseur. It has simple lines without friks which make it graceful without a hint of gaudiness.

Bhavani : This design has been copied from the silk carpet produced in Bhavani of Coimbatore District. This consists of a number of colours resembling the solar spectrum and, if well finished it is difficult to distinguish it from a mat of cotton or silk. This mat enjoys extensive demand within the country and abroad.

Malaikulan : Both ends of this Korai mat are plain white. (about 6 inches) Below it, ordinary geometrical designs are woven. The middle of the carpet is woven squares of different colours; red, green, violet and orange.

Plain Carpet Design : This design, is different from that described earlier. The borders are designed with light dots, diamonds, squares or cross hatches. The centre of the mat is decorated with floral design.

Taj Mahal : This design is rare. Only one or two master craftsmen in the locality are capable of weaving this design.

It is in great demand. All the colours, red, orange, violet, maroon, black and green are used in the weaving of this design. The borders are woven with plain bands of colour and in the middle the TAJ MAHAL is woven. The slender minarets and the stately dome of the Taj Mahal are faithfully reproduced in Korai grass.

Gopuram : This is a difficult design which requires extraordinary skill. This design is a monopoly of one or two weavers in the village. The mat has only two colours green and the natural colour of Korai grass. The centre portion of the mat contains the design of the temple Gopuram a difficult design to reproduce.

For many years, the mat weavers have been producing mats of high counts, but with the sudden rise in the price of raw materials, the non-availability of raw materials to feed the needs of handicraft, the change in public taste and the uncertain demand for the products coupled with the extra time consumed in the manufacture of high count mats which is not commensurate with the return obtained, has forced many of the mat weavers to take to the production of the medium quality mats of lower counts. These mats are produced with

Korai grass imported from Karur Taluk. The Karur grass is quite unsuited for the manufacture of high count mats and, therefore, more and more weavers have taken to the weaving of medium count mats.

The fine variety of Korai mats are well beyond the capacity of the poor people. So their demand is limited to medium count mats which can also be used as floor mats for sleeping. Data relating to the total production of mats in surveyed units are furnished in Table 7.1.

Table - 7.1

Total Production of Korai Mats in the Surveyed Villages

Villages	Coarse output	Medium output	Super- fine output	Total output
(1)	(2)	(3)	(4)	(5)
1. Villangudi	4890	180	200	5240
2. Arunthavapuram	4595	160	-	4745
3. Pullikkudi	4980	175	-	5055
4. Sendangudi	4135	-	-	4135
5. Sambalur	2250	-	-	2250
6. Vandayar Irruppa	4980	160	-	5140

(Contd.)

	(1)	(2)	(3)	(4)	(5)
7. Karsimeendarkottai	4750	120	-	-	4870
8. Pallakulan	4950	-	-	-	4950
9. Madigai	5200	-	-	-	5200
10. Annalokuppan	1380	-	-	-	1380
11. Pudukottai (Vaduvar)	4130	-	-	-	4130
12. Thenpathi (")	3680	-	-	-	3680
13. Sendangadu	3425	650	550	-	4625
14. Coleroon (Thaikkal)	4225	750	690	-	5665
15. Kodikalpalayan	2300	150	50	-	2500
16. Maruthapettinam	6850	200	100	-	7150
17. Kongalancherri	3400	400	100	-	3900
18. Manjakollai	350	-	25	-	375
19. Paravacheri	1350	-	-	-	1350
20. Vaithianathampettai	4150	300	-	-	4450
21. Pandaravadi - T	2650	-	-	-	2650
22. Araiyapuram	2250	450	-	-	2700
23. Mappilalokuppan	1060	-	-	-	1060
24. Ahalangan	4950	1600	175	-	6725
25. Kidarangondan	410	-	-	-	410

It is clear from table 7.1 that nearly a lakh of mats are being manufactured in the sample units. Of these the largest number of mats (7150) are manufactured in Maruthapattinam, Ahalangan (6729), Coleroon (5665), Villangudi (5240) and Madigai 5200. The lowest production is in Kidaragondan where mat weaving is practised only as a part time work and also only few families are engaged in it. The average annual product of mat per village works out to 3667 i.e., 10 mats are being manufactured every day by sample units in every village.

Table 7.1 also reveals the fact that all the Korai mat units are producing coarse varieties of mats (67180). Only in 13 villages, medium varieties of Korai mats of small quantity are manufactured (5265). Only 8 villages produce super-fine variety (1890).

A feature that is commonly observed in the Korai mat weaving industry is the variations in the price of different varieties of korai mats. The different counts and their quantity produced in different villages are given in Table 7.2. But it is also equally interesting to note that there are variations in the price level of the same variety of Korai mat between the different villages of production. Therefore, the total variations can be thought of as (1) variations due to

the location of the place of production & (2) variation due to the variety of production. In order to test the significance of such variations the analysis of variance two way classification method was used by taking three different varieties such as coarse, medium and fine. Ten villages are taken for analysis and the price levels are given in table 7.2.

The price of the mat i^{th} variety in the j^{th} village. ($i = 1, 2, 3$) and $j = 1, 2, \dots, 10$) is of the mathematical form.

$$Y_{ij} = \mu + \alpha_i + \beta_j + \epsilon_{ij} \text{ where}$$

μ = overall average price

α_i = additional average price due to i^{th} variety.

β_j = additional average price due to the j^{th} village.

ϵ_{ij} = random fluctuations.

The analysis of variance table is given in Table 7.3.

We test two hypotheses. They are indicated by H_1 and H_2 .

H_1 = The average prices of the different varieties are the same.

(i.e.) $1 = 2 = 3$

H_2 = The average prices of the different villages are the same

(i.e.) $1 = 2 = \dots = 10$

Table - 7.3

Source of variation	Degrees of freedom	Sum of squares	Mean sum of squares	F ratio
Between varieties	2	8.665	4.33	1.54
Between villages	9	196.749	21.86	7.75
Error	18	50.633	2.82	
Total	29	256.047	29.01	9.79

$$F_{5\%}(2, 18) = 3.55$$

$$F_{5\%}(9, 18) = 2.46$$

Since F calculated is $<$ $F_{5\%}$ at $(2, 18)$

there is no significant difference in prices between

1) the varieties. So H_1 is accepted.

2) Since F calculated is $>$ $F_{5\%}(9, 18)$ there exists significant difference in prices between the villages.

Therefore, H_2 is rejected.

From this we conclude that the variation in the prices is not significant due to the varieties but it is due to the villages of origin only.

The gross earnings of the Korai mat weaving enterprises may now be estimated by multiplying the total output with the sale price. The total earnings of the enterprises covered by survey are given in Table 7.5.

Table - 7.5

Gross Earnings of Korai Mat Weaving Enterprises

Villages	No. of enterprises	Gross earnings Rs.	Average earning per establishment Rs.
1. Villangudi	8	37497	4687
2. Arunthavepureram	7	27430	3918
3. Pullikudi	8	30015	3751
4. Sendangedu	12	19255	1604
5. Sambalur	3	15000	5000
6. Vandayar Irruppu	7	22620	3231
7. Karaimendarkottai	7	30650	4378
8. Pallikulam	8	26150	3868
9. Madigai	9	28050	3116
10. Annaikuppan	2	7620	3810
11. Pudukottai (Vaduvur)	8	25470	3183
12. Thenpathi (")	7	22310	3187
13. Sendangudi	8	61385	7673

(Contd.)

Villages	No. of enterprises	Gross earnings Rs.	Average earning per establishment Rs.
14. Coleroon (Thaikkal	8	68782	8597
15. Kodikalpalayam	4	19400	4850
16. Maruthapattinam	10	46450	4645
17. Kongalancherri	6	32250	5375
18. Manjakollai	1	3370	3370
19. Paravacheri	2	8350	1625
20. Vaithinathampettai	7	33800	4828
21. Panderavadi - T	5	14850	2970
22. Araiypuram	5	22300	4460
23. Mappilaiyuppan	2	5755	2877
24. Ahalangan	9	69575	7730
25. Kidaragondan	1	3155	3155

From Table 7.5 it can be seen that the gross earnings of the mat weaving enterprises covered by the survey comes to Rs.6.8 lakhs and the average earnings per unit is Rs.4425. The largest amount of gross earning Rs.69575 is earned by Ahalangan. But the maximum average earning is recorded by units located in Coleroon villages and that comes to Rs.8597. Units located in Sendangadu village earn the lowest income viz., Rs.1604.

Still another problem that could be considered in studying the economic aspect of the Korai mat weaving industry is the application of simple correlation analysis by taking the number of looms (x) and profits in thousands of rupees (y). This will help us to find how profit is dependent on the number of looms installed in each unit and vice versa. Table 7.8A gives data relating to this aspect and from the table we find that the correlation coefficient is 0.408. Based on the table the line of regression of x on y and y on x are also found.

Table - 7.8A

Villages	No. of looms	Profit in
Nos.	x	(Rs.1000)

	Y	
1. Villangudi	12	11
2. Arunthavapuram	17	15
3. Pallikudi	15	16
4. Sendangada	20	4
5. Sambalur	5	9
6. Vandayar Irruppa	17	8
7. Karaimoendarkottai	17	8
8. Pallakulam	20	12
9. Madigai	22	11
10. Annaikeppam	6	3

(Contd.)

Villages	No. of looms X	Profit in (Rs.1000) Y
11. Pudukottai (Vaduvur)	13	10
12. Thanpethi (")	17	9
13. Sendangudi	18	37
14. Coleroon (Thaikkal)	20	43
15. Kodikalpalayam	3	2
16. Maruthapattinam	19	20
17. Kongalancherri	7	19
18. Manjakollai	1	1
19. Paravacherri	1	5
20. Vaithinathampettai	15	2
21. Pandaravadi - T	8	8
22. Araiyapuram	8	14
23. Mappilaiikuppan	3	2
24. Ahalangan	18	59
25. Kidarangondan	1	2

$$\text{Mean } \bar{x} = \frac{\sum X}{25} = 12.48$$

$$\text{Mean } \bar{y} = 13.2$$

$$\text{S.D. of } x = \sqrt{\frac{\sum X^2}{25} - \bar{x}^2} = 7.532$$

$$\text{S.D. of } y = \sqrt{\frac{\sum Y^2}{25} - \bar{y}^2} = 13.694$$

$$\text{Correlation Coefficient} = 0.408$$

The line of regression of x on y is

$$x = (0.2234)y + 9.5232$$

The line of regression
of y on x is
 $y = (0.742)x + 30940$

The idea of the net earnings may now be worked out by analysing value of the input and output. Data relating to value of an input and output of the mats weaving establishment are furnished in Table - 7.6.

Table - 7.6

Villages	Total value of output Rs.	Total value of cost of production Rs.	Net earnings Rs.
(1)	(2)	(3)	(4)
1. Villangudi	32475	16928	15547
2. Arunthavapuram	27430	12593	14847
3. Pullikkudi	30015	11951	18064
4. Sendangadu	19255	15722	3533
5. Sembalur	15000	5599	9401
6. Vandayar Irruppu	22620	14913	7707
7. Karaimoondarkottai	30650	12867	17783
8. Pallakulam	26150	14847	11303
9. Madigai	28060	16574	11476
10. Annaikuppam	7620	4342	3278
11. Pudukottai (Vaduvar)	25470	14759	10711
12. Thanpathi (")	22310	13565	8745
13. Sendangudi	61385	24932	36553
14. Celeroon (Thaikkal)	66782	26249	42533
15. Kodikalpalayan	19400	7745	11655

(Contd.)

	(1)	(2)	(3)	(4)
16. Maruthapattinam		46450	17230	29220
17. Kongalancherri		32250	13329	18921
18. Manjakollai		3370	2395	975
19. Paravecheri		8350	3525	4825
20. Vaithinathampettai		32800	20876	11924
21. Pandaravadi - T		14850	7097	7753
22. Araiyapuram		22300	8032	14268
23. Mappilaikuppam		5755	4147	1608
24. Ahalangan		69575	11107	58468
25. Kidarangonden		3155	1720	1435
Total		690467	317934	372533

From Table 7.6 we find that the total net earning comes to Rs. 1,725 lakhs. This works out an average net earnings of Rs. 2374 per unit. The total net earning is the maximum at Rs. 58468 in Ahalangan and minimum at Rs. 975 in Manjakollai. There are 15 villages whose average net earnings exceed Rs. 10000. Another 10 villages have an average net earnings less than Rs. 10000. Of these, Manjakollai and Kidarangonden get less than Rs. 1600 per annum.

Net earning per establishment in different villages is also expected to throw further light into the rate of return of the Korai mat weaving industry. This is attempted in Table - 7.7.

Table - 7.7

Villages	Average earnings per establishment	Average cost per establishment	Average net earnings
	No.	Rs.	Rs.
(1)	(2)	(3)	(4)
1. Villangudi	4684	2116	2568
2. Arunthevapurem	3918	1797	2121
3. Pallikudi	3752	1494	2258
4. Sendangadu	1805	1310	295
5. Sembalur	5000	1866	3134
6. Vandayar Irruppu	3231	2130	1101
7. Karaincendarkottai	4378	1838	2540
8. Pallakulam	3268.75	1830.875	1447
9. Madigai	3116	1841	1275
10. Annaikuppam	3810	2171	1639
11. Pudukottai (Veduvur)	3183	1844	1339
12. Thanpathi (Veduvur)	3187	1938	1249
13. Sendanguai	7673	3104	4569

(Contd.)

(1)	(2)	(3)	(4)
14. Coleroon (Thaikkal)	9507	3281	5316
15. Kodikalpalayam	4950	1937	2913
16. Maruthapattinam	4685	1723	2922
17. Kongalancherri	5375	2221.50	3153
18. Manjakollai	3370	2395	975
19. Paravacheri	4175	1762.5	2412
20. Vaithinathampettai	4820	2982	1846
21. Pandaravadi -T	2970	1419	1551
22. Araiypuram	4460	1606.4	2853
23. Mappilaikuppam	2678	2074	704
24. Ahalangan	7730	1234	6496
25. Kidarangondam	3155	1720	1435

The average net earning is found to be the highest in units located in Ahalangan Village (Rs.6496) and lowest in units located at Mappilaikuppam Village (Rs.704). The variation is due to the difference in costs of production.

An analysis of net return per loom is expected to give further insight to our understanding of the economics of Korai mat weaving industry. This is attempted in Table - 7.8A.

Table - 7.8A

Villages	Average output per loom	Average cost value per loom. Rs.	Average net earning per loom Rs.
1. Villangudi	3123	1411	1712
2. Arunthavapuram	1614	740	874
3. Pullikudi	2001	797	1205
4. Sendangadu	664	542	122
5. Sembalur	3000	1120	1880
6. Vandayar Irruppu	1331	877	454
7. Karaimoondarkottai	1803	757	1046
8. Pellakulam	1308	732	576
9. Madigai	1275	753	522
10. Annaikuppen	1270	724	546
11. Padukottai (Vaduvur)	1959	1135	824
12. Thenpathi (")	1312	798	514
13. Sendangudi	3410	1080	2030
14. Coleroon (Thaikkal)	3439	1312	2127
15. Kodikalpalayam	6467	2502	3885
16. Maruthapattinam	2445	907	1538
17. Kongalancherri	4607	1904	2703
18. Manjakkollai	3370	2395	975
19. Paravacherri	8350	3525	4825
20. Vaithinathanpettai	2253	1392	861
21. Pandaravadi - T	1856	887	969
22. Araiypuram	2788	1004	1784
23. Mappilakuppen	1918	1382	536
24. Ahalangun	3865	617	3248
25. Kidarangandan	3155	1720	1435

The average net return per loom is the highest at Rs.4825 in Paravacherri, followed by Kodikalpalayam Rs.3885 and Ahalangun Rs.3248. It is the lowest at Rs.122 in Sendan-gada. The average net earning is found to fluctuate widely among the villages.

A classwise analysis of net earnings will lead to a better understanding of the net earnings of the mat weaving industry. The relevant data for this analysis are given in Table - 7.8B.

From Table 7.8B it can be seen that the percentage earnings ($\frac{\text{earning}}{\text{input}} \times 100$) of the forward class (526.94) is the maximum. This is probably because better education helps them to utilise the resources in the most efficient manner. Muslims come second with 219 percent. The percentage earnings of the backward classes is the minimum (98%). When we deduct the cost of the inputs from their earnings we find that the net profit earn is rather low.

Another way of studying the economic aspect of Korai mat weaving industry is to find out the average gross earnings per unit. For this purpose a frequency distribution of the average

gross earnings for the various sample units is prepared and presented in Table - 7.8C.

Table - 7.8C

Average earnings per establishment	Mid Value x/100	Number of Villages f
Rs.1000 - 2000	15	2
2000 - 3000	25	2
3000 - 4000	35	10
4000 - 5000	45	6
5000 - 6000	55	2
6000 - 7000	65	0
7000 - 8000	75	2
8000 - 9000	85	1

$$\text{Mean value } \bar{x} = \frac{\sum fx}{N} = \frac{4180}{1000}$$

$$S.D = \sqrt{\frac{\sum fx^2}{N} - \bar{x}^2} = \frac{1666.61}{1000}$$

It is found from Table that the average earnings per unit comes to Rs.4180/- with a standard deviation of 1666.61.

From table 7.9 it is clear that though profit margin is greater in medium and fine varieties, the sample units manufacture only coarse varieties and hence the profit per unit among the sample units is low. The profit per loom for coarse variety is lowest in Sendangudi and highest in Paravecherri. Profit per loom for medium variety is highest in Ahalangan and lowest in Pallikudi. Regarding the profit per unit, profit per unit is lowest in Sendangudi and highest in Sembalur because mat weavers in Sendangudi take this as part time occupation but in Sembalur it is a full time occupation. For medium variety of mats, profit per unit is lowest in Pallakulam and highest in Ahalangan because in Ahalangan the forward class people do this job and pay more attention than the harijans doing this work as part time occupation in Pallakulam. Profit per unit of superfine, in Coleroon - Thaikkal is much higher because the muslim mat weavers are specialists in design mats and inherit this work from their parents. The profit earned per unit is lowest in Maruthapettinam. The profit per enterprise is slightly higher in coarse variety of mats than medium and superfine varieties.

The real profits earned by the Korai mat weaving enterprises has to be calculated not in terms of the value of input and output but in terms of cost of production and actual sales. This exercise is done in table 7.10.

It may thus be seen that the plight of the fine mat weaver is indeed pitiable. Generally, the mat weaver is economically worse off compared to artisans employed in other occupations. But as between a fine mat weaver and a medium quality mat weaver, the fine mat weaver's position is bad and his skill does not fetch him a subsistence wage. It is only the creative talent in him and the will to survive which is keeping him in the specialised craft.

The cost of initial equipment is not large and is within the reach of any mat weaver. A wooden loom, a knife, a plank, a dish, a charka and a vessel for dyeing can all be purchased within the village for a petty sum of Rs.50/-.

The economic condition of the Thanjavur District koral mat weaver is deplorable. Many of their huts were in a dilapidated condition with the thatched roof made of coconut leaf, mud walls having crumbled away with hardly adequate space for a family of three to live in. In spite of these difficulties it is surprising to note that many of the weavers have not switched over to other occupations. If at all they have made any change, it is the switch-over from production of fine variety to that of medium quality variety.

The techniques of this craft are so difficult to master and hence it still remains the hereditary monopoly of the Labbais.

It is true that this craft calls for a high order of skill, but does not need any special equipment. By constant application and practice under good artisans, one can master this craft. The reason then is not so much the hereditary monopoly but the incentive of the workers to pursue this craft. Even the master craftsmen who are at present engaged in the manufacture of fine mats are finding it extremely difficult to make both ends meet. They have themselves switched over to the production of medium quality mats. Such being the case, it is no wonder that members of other communities have not thought it either lucrative or necessary to master this craft and take to this avocation. Further the return is not commensurate with the labour involved. This is the main reason why fine mat-weaving continues to remain the monopoly of the Lubbai Muslims throughout the centuries.

Medium quality mats are, however, woven by members of various communities including Lubbais, Rowthers and Chettiars. Training for this craft is always imparted at a very young age, the son or the daughter sitting by the side of the father or the mother and cleverly following the craft movements, of the fingers. By gradual process of apprenticeship one learns the rudiments of the craft until he or she is able to take the place of his or her father or mother at the loom. So much for

traditional training, as regards specific training to be imparted in the fine techniques of the craft, the All India Handicrafts Board and Departments of the Industries and Commerce of the State Government have done much to foster new techniques of production and evolve better designs so as to increase marketing and export potential.

Realising the fact that the future growth of any craft lies on the young shoulders, the Madras Government came forward sanctioning Rs.13,500/- for training the artisans in Fine mat weaving especially in weaving names and designs on the fine mats.

CHAPTER - VIII

MARKETING

In the last chapter we have shown the profit aspect of Korai mat making. This chapter discusses the problem of Korai mat marketing. The Korai mats produced in Tanjavar District are not only famous in Tamil Nadu but also are famous in other States like Bombay, Karnataka, Bengal, Utter Pradesh etc. Especially Korai mats produced in Coleroon, Villangudi, Sengangudi, Ayampet have great demand in these states. The marketing of Korai mats is mostly done by middlemen merchants mainly Rewthers. They take a very high margin.

The wholesale merchants who are engaged in the distribution of Korai mats are virtually oligopolists. These merchants store the Korai grass, during the rainy season, (October to December) and keep a sufficient stock of twisted yarn, dyes and other materials. They keep themselves well informed of the prices of different varieties of mats in different localities. They never leak out this information to the village producers. Hence the producers in the villages

remain in the dark about the trend of prices of different varieties of mats ruling in the market. In places like Vandayarirruppu, Arunthavaparam and most of the regions in Mannargudi and Orathanad Taluks, there is a strong tendency for each producer to bring his produce to the local markets himself but in most of the places in Papanasam, Sirkali Taluks, the mat makers are forced to sell their products to traders who have advanced them money and raw materials. The traders are largely located in Coleroon, Ammapettai, Ayyampettai, Thanjavur city, Thiruvarur, Pattakottai and some small towns in Thanjavur District.

The following table (Table 8.1) shows the magnitude of the quantity of Korai mats sold through middlemen, co-operative societies and by the weavers themselves.

Table - 8.1

Sale of Korai Mats Through Different Agencies

Villages	% of sales by middlemen	% of sales by co-operative societies	% of sales by the producers
(1)	(2)	(3)	(4)
1. Villangudi	5	95	-
2. Arunthavaparam	20	-	80
3. Pullikudi	30	-	70
4. Sendangadu	40	-	60

(Contd.)

(1)	(2)	(3)	(4)
5. Sembalur	50	-	50
6. Vandayar Irruppu	25	60	15
7. Karainendarkottai	60	-	40
8. Pallakulam	60	-	40
9. Madigai	70	-	30
10. Annaiyuppan	65	-	35
11. Pudukottai (Vaduvur)	50	-	50
12. Thenpathi (")	45	-	55
13. Sendangudi	60	20	20
14. Coleroon - Thaikkal	50	50	-
15. Kodikalpelayam	60	-	40
16. Maruthapattinam	70	-	30
17. Kongalancherri	70	-	30
18. Manjakollai	70	-	30
19. Paravacherri	60	-	40
20. Vaithinathampettai	65	-	35
21. Pandaravadi - T	60	-	40
22. Araiyapuram	70	-	30
23. Mappilaiyuppan	75	-	25
24. Ahalangun	75	-	25
25. Kidarangondan	70	-	30

Table 8.1 reveals that a major share of mats produced are marketed through the middlemen. Table 8.2 gives an idea about the price spread of different varieties of Korai mats from producers to consumers.

Table - 8.2

Price Spread of Different Varieties of Korai Mats

Kinds of Mats	Average price received by the producer Rs.	Average price received by the middlemen Rs.	Price spread by mat Rs.
(1)	(2)	(3)	(4)
1. Coarse 30" x 66"			
16 counts	3.50	4.00	0.50
20 counts	-	-	-
22 counts	4.00	4.50	0.50
24 counts	-	-	-
2. Medium 30" x 66"			
30 counts	4.25	5.00	0.75
32 counts	-	-	-
36 counts	-	-	-
40 counts	4.50	5.50	1.00
3. Superfine 30" x 66"			
50 counts	-	-	-
60 counts	-	-	-

(Contd.)

	(1)	(2)	(3)	(4)
4. <u>Coarse</u> 36" x 72"				
20 counts	-	-	-	-
22 counts	6.50	7.00	0.50	
24 counts	7.25	8.00	0.75	
5. <u>Medium</u> 36" x 72"				
30 counts	-	-	-	-
32 counts	-	-	-	-
36 counts	-	-	-	-
40 counts	14.00	15.00	1.00	
6. <u>Superfine</u> 36" x 72"				
50 counts	33.00	35.00	2.00	
60 counts	35.00	40.00	5.00	

From table 8.2 it can be seen that the size of price spread increases with the quality and counts of the mats.

The Kerai mat weaver producing on a small scale has usually neither the time nor the ability to undertake directly the marketing of his produce. Again, often vast distances separate the mat weaver from the final consumer of his product. Hence the marketing of output involves many ancillary services

such as transport and other facilities, storage, grading, financing at the different stages of marketing like assembling, sorting etc. This can be done cheaper when a larger volume of output is handled. Thus, the small producers of koral mats are forced to hand over the task of marketing their products to merchants - middlemen. The small scale producers of Koral mats 'live as fishes do in the sea, the great ones eat up the little! This makes the condition of the small scale koral mat weaver rather precarious.

The quantity of mats marketed also fluctuates according to the season. During the rainy season (October to December) the harijan producers stop production due to lack of space, water logging on earth surface etc. Moreover, during the busy agricultural seasons, most of the part time weavers pay little attention for Koral mat weaving. Table 8.3 shows the fluctuations in output in different seasons.

Table - 8.3

Seasonal Variations in Output

	Agricultural off season (3 months)	Busy sea- son in Agricul- ture (6 months)	Rainy season (3 months)	Output
1. Harijans	29150	11211	4484	44845
2. Muslims	11665	4487	1795	17947
3. Others	19850	7634	3054	30538

During the 1960's there were 10 co-operative koral mat producing and Marketing and Sales Societies in Thanjavur District. They were working under the control of the Industries Department. But co-operative societies at Kothangudi, Surapallam, Vaithinathampettai, Kannanthangudi were liquidated during 1970's. Now some of the co-operative mat weaving societies like Vandayarirruppu, Vilandrasawudram, Annaikaranchatram have become defunct. Only one co-operative koral mat weaving production and sales society at Villangudi is working on sound lines. Now this society is working under the control of Khadi Craft Board. Next to Villangudi, Coleroon Co-operative society is also working satisfactorily.

The following table (Table 8.4) shows the number of members, shares, the volume of output and sales of the co-operative koral mat weaving societies.

Table - 8.4

	No. of members	Shares	Volume of output	Value of sales (Rs.)
1. Villangudi	61	360	5240	37975
2. Coleroon	82	410	5665	68782
3. Vilandrasawudram (Sendangudi Muslims)	93	1360	3620	51385
4. Vandayar Irruppu (Harijans)	81	405	5140	22670

The co-operative societies receive bulk orders for coarse variety from hospitals, wholesale cloth merchants in the district, Government Offices etc., for superior variety from Handicraft Sales Emporias (Poombuhar), Khadi Boards and for medium variety from big temples and pandal contractors. They also receive orders from various educational institutions, stores and shops and the organisers of various conferences. Special orders for superfine variety are received from conveners of fairs and exhibitions, landlords and big industrialists.

The main feature of a Co-operative (Marketing) Society as distinguished from a middlemen-merchant is that it sets its face against exploiting tendencies, guarantees absolutely correct quantity and quality and adopts a strictly honest and helpful policy. Table 8.5 shows the average cost of production and average price of Keral mats of different varieties and counts produced and sold by co-operatives and merchant-middlemen.

Table - 8.5

Average Cost and Price of Korai Mats of Different Varieties

	Counts	Size of mats	Villangudi Co-operative Society		Merchant Middlemen	
			Average cost	Average price	Average cost	Average price
			Rs.	Rs.	Rs.	Rs.
1. Fell design	25	45" x 72"	13.00	15.00	13.50	16.50
2. Star design	30	36" x 72"	17.50	20.00	18.00	21.50
3. silk mat	50	36" x 72"	35.50	38.00	36.50	39.50
4. Mats with bri-degroom's name	40	36" x 72"	20.00	22.00	20.50	22.50
5. Khadari	22	36" x 72"	6.50	9.00	8.00	10.50
6. Koddadi design	22	36" x 72"	9.00	11.00	9.50	12.25
7. Nice white	20	36" x 72"	10.50	12.00	11.25	12.75
8. Nice silk	20	36" x 72"	10.00	12.00	10.50	13.25
9. Rough silk	16	36" x 72"	7.50	10.00	8.00	11.50
10. Dining Mat	20	18" x 18"	6.00	8.50	6.50	9.75
11. Child mat	16	21" x 36"	6.00	8.00	6.50	8.75
12. Rolling mat	16	18" x 80"	8.50	11.00	9.00	12.75
13. Bengal double	16	36" x 72"	13.75	16.00	14.50	17.50

Table 8.6 shows the purchase price and sales price of different counts and sizes of Korai mats by Muslim co-operative Society, Vilandasamudram and Villangudi. From the table it can be seen that the cost and price of mats produced under merchant middlemen are greater than that of co-operative societies. Nevertheless the co-operative mat weaving societies have not been a success due to the individualistic and scattered nature of the weavers. Hence co-operation in Korai mat weaving is a failure.

Table - 8.6

	Count	Size	Villangudi co-operative society		Vilandasamudram co-operative society	
			Average cost Rs.	Average price Rs.	Average cost Rs.	Average price Rs.
1. Full design	40	36x72	19.00	21.00	18.00	18.50
2. Full design	50	42x72	38.00	40.00	36.50	38.00
3. Khadari	26	36x72	7.00	8.50	7.00	8.00
4. Khadari	20	36x72	12.00	13.00	11.00	12.50
5. Star design	24	36x72	15.00	16.50	16.00	17.50
6. Star design	22	36x72	14.50	16.50	15.00	17.00
7. Bobby double colour	24	36x72	16.00	18.00	16.00	18.00
8. Nice white	20	36x72	13.50	14.00	12.00	13.50
9. Kolappai	22	36x72	12.75	13.50	12.00	13.00
10. Child mat	16	21x37	6.00	8.00	6.00	7.50
11. Bengal double	16	36x72	13.75	16.00	13.00	15.50
12. Koddadi design	22	36x72	9.00	11.00	8.50	11.50

A Case Study of Korai Mat Marketing at Coleroon

The mats produced in Coleroon are famous for their quality not only in Tamil Nadu, but also in different states of India. A study of the railway and lorry service receipts for goods booking clearly indicates that it is in good demand and has gained popularity in the cities of India such as Delhi, Bombay, Madras, Bangalore, Madurai, Calcutta, Coimbatore, Agra etc. To all these places there is regular export of Korai mats. This clearly indicates that the Coleroon mats are good in quality and that they are in a position to satisfy the tastes of the consumers in such far off places.

The marketing of such quality mats is now undertaken by a number of merchants at Coleroon. Nearly fifteen merchants live in Coleroon near the huts of the mat weavers. They are living in well built houses. They are also Muslims. They have adequate finance also.

These merchants store the Korai during the season (October to January). They also keep in stock twisted yarn and dyes. They advance loans to the Korai mat weavers free of interest. But one of the conditions for the grant of loans is that the finished mats should be sold only through the creditor middlemen.

Usually loans are taken for a religious function like Ramzan or for the marriage of a daughter or son, or in connection with sickness of the members of the family. The loan thus taken will not be fully repaid. Once the mat weavers become indebted like the proverbial Indian cultivators they continue to be so for ever.

The merchant supplies the indebted craftsmen with raw materials. If the merchant-middleman has a specific order for particular varieties of mats, he asks his client to make such varieties and supply. If he has no specific orders, he allows him to make any kind of mat which the craftsman pleases.

The craftsman, after finishing the weaving of mats, takes them to the middlemen. The middlemen have a schedule of prices for each variety of mat. If the mat is an unfinished one, 30 paise will be deducted from out of its price. The price of raw materials supplied for the particular mat is also deducted and the rest is paid to him in cash.

It may be mentioned here that the transactions are not as simple as have been shown above. Usually there is a loan account which the craftsman will not be in a position to repay in the immediate future. There is also a running account.

This running account indicates all the raw materials bought from the middlemen on credit and also the advances taken for a particular mat. The craftsman as he finishes the mats brings the mats to the middlemen. The price of the mats is credited in his account. Towards the particular mat required the middlemen pay an advance. For instance, for a single mat costing Rs.5/- the middlemen pay an advance of Rs.3/-, Rs.6.75 an advance of Rs.4/-; Rs.9/- an advance of Rs.5.50.

Thus the running account continues. The transactions are not closed at the stage of supplying the finished products. The raw materials are supplied by the middlemen, the finished products are bought by the middlemen and for the workmanship the middlemen pays a below subsistence wage.

The middlemen make the selvedge end and put a number on the mat. The number put on the mat bears relationship to the cost price of the mats. The middlemen-merchant generally take 25% profit. Thus a mat costing Rs.5/- is sold at Rs.6.25.

The middlemen are of the opinion that there is considerable expense in stocking raw materials like korai, twisted yarn and dyes. Besides, they have to buy the finished products as and when they are brought for sales and slowly accumulate the stock against a particular order or expectation of

an order. The loans granted to the craftsmen are without interest. So they hold the view that the 25% gross profit they make on sales give them only 10 per cent net profit.

The craftsmen do not find fault with the existing arrangement. They express their gratitude to the middlemen for

- (1) Placing orders,

- (2) Relieving them from distress through financial accommodation,

- (3) Buying the finished products irrespective of the fact that they can be immediately sold or not.

The craftsmen feel that without the help of the middlemen, they cannot survive in this profession.

Marketing of Coleroon Mats

Mats from Sirkali and Coleroon are sent to other parts of India, mostly to Karnataka and Andhra Pradesh. Table 8.7 shows the marketing of mats produced in Coleroon by all the merchants.

Table - 8.7

Year	Total purchase ₹	Total sales ₹	Profits ₹
1973-74	33,518	39,681	6,163
1974-75	36,232	43,464	7,232
1975-76	38,364	45,742	7,373
1976-77	39,427	47,814	8,387
1977-78	40,978	49,981	9,063
1978-79	43,813	56,103	12,290

Table 8.8 indicates movement of the Coleroon mats through wagons and trucks for the year 1978-79

Table - 8.8

Year	Month	Bundles	Year	Month	Bundles
1978-79	April	90	1976-77	January	161
	May	95		February	169
	June	100		March	179
	July	110		April	188
	August	118		May	196
	September	127		June	211
	October	136		July	-
	November	145		August	219
	December	153		September	227
				October	236
				November	245
				December	252

CHAPTER - IX

CONCLUSION

It has to be emphasised at the cost of repetition that the study has been undertaken to assess the social and economic conditions of the Koral mat weavers spread in the many districts particularly in the Thanjavur District of Tamil Nadu. It is found that the industry is having a very high employment potential but its capital requirement is very low. It gives full time occupation to large landless agricultural workers during slack season and part time occupation during the busy season. Therefore, the role of the industry in supplementing the meagre income of these workers who are essentially landless agricultural labourers is by no means small.

It has also been found that some people from the forward communities and from among the Muslims have taken to Koral mat weaving. But, by and large, it is members from the backward and the Harijan communities who constitute the bulk of the mat weaving population. It has already been

pointed out in Chapter - VII that the forward class people and workers from the Muslim community are able to get higher prices for their wares than the backward and harijan workers, who get only lower prices. This can be attributed to the better educational and economic background of the former. The backward class workers are unlettered, illiterate and are in very poor economic condition.

One peculiar feature that stands out in prominence in the industry is that the workers are not selling their wares directly in the market. They are obliged to sell their wares to middlemen who have advanced both money and materials to them. Though the middlemen are not realising any interest on the loans advanced, it is to be presumed that the price offered by them is not reasonable enough as the workers have absolutely no bargaining capacity. It is quite possible that they will be able to make good the loss of the interest by fixing low prices.

Herein lies the scope of exploitation of the workers. Therefore, if the workers are to be emancipated from the economic exploitation by the middlemen, it is necessary to bring the former under the purview of a common organisation which will be able to provide them cheap finance and better marketing

facilities. In the present circumstances one cannot think of a better organisation than the co-operative societies which are doing some commendable service in mitigating the sufferings of illpaid and unorganised workers in other sectors.

In this connection, it is worth pointing out the scheme introduced by some nationalised banks for providing cheap credit facilities to the weavers. Recently some nationalised banks like the State Bank of India and the Overseas Bank took the initiative in assisting the weavers with loans ranging from Rs.150/- to Rs.200/- on easy terms. The loans were repayable in monthly instalments ranging from Rs.5/- to Rs.15/-. As the loans could be advanced on the security of lands only many of the weavers who traditionally belong to a landless class could not avail themselves of these loans. But some land owning villagers volunteered to stand security for the weavers but the end result was that the weavers had to sell their finished products to those people who provided them security. This practice has deprived the mat weavers of the benefits of the cheap bank loans. Therefore, in many cases they continue to take loans from money lenders and middlemen or commission agents. Though the middlemen did not realise interest from

the weavers the obligation to sell the products to those who helped them with finance resulted in the fixation of very low prices and consequent exploitation. Practically no weaver today is self-financing. Like the proverbial Indian agriculturist, once the weaver is in debt he is always in debt. However much he tries he finds it difficult to extricate himself from the clutches of the money lenders. This once again highlights the necessity of bringing the workers under the purview of co-operative society. As the middlemen will always be opposed to such co-operativisation, the government will have to take the initiative in this matter.

The co-operative societies should set up Esperia Complexes at different places to act as infrastructure for the development of the mat industry. They should make bulk purchases of the raw materials at low prices for distribution among the workers. They should also act as the outlet for the direct sale of the Korai mats. This, it is hoped, will progressively eliminate the middlemen who have been exploiting the poor artisans for long.

Another feature which deserves special mention is the type of technology that is in vogue in the industry. The

method of production is very primitive and antiquated. The implements used, though simple and cheap, are far from being satisfactory and do not lend themselves to higher productivity.

The following are the implements 1) Sitting plank
 2) Mallai Kambu (wooden legs) (3) Suthin Firimargu (Beam)
 4) Munthandu (Frontal beam) (5) Agam (Lead) (6) Veludu Kambu (Beam) (7) Makali (Tripod stand) (8) Mithi Pattai (Treadle beam) (9) Anaikushali (Separating beam) (10) Kushali (needle) (11) Ethi Kalthar (Round bamboo stick) and (12) Cotton pad (leg rest). A casual look at these implements shows how unproductive they are. If some improvement is brought about in the various implements used workers productivity can be increased. This is not to suggest any large scale mechanisation of the industry. Since the workers happen to be traditionally poor and since large scale mechanisation will lead to substantial displacement of labour, large-scale mechanisation is out of question. But there is scope of introducing some intermediate technology recommended by late Professor Schusscher for the development of under-developed economies. By intermediate technology we do not mean large scale mechanisation, it only means updating

the present implements used. For instance, the wooden implements like bamboo can be replaced with advantage by some cheap metallic device; manpower can be replaced by electricity on a progressive basis. Powerlooms can also be thought of in the units to be started on co-operative basis. Powerlooms can be experimented with on a selective basis by the well-to-do sections of the weavers, care should be taken against any large-scale displacement of labour. In the absence of some such intermediate technology, the scope of improving the lot of the mat weavers through raising productivity seems remote.

Yet another peculiar feature is also noticed in the industry. The mat weaving is spread throughout the length and breadth of Tamil Nadu. Different types of Korai mats, coarse, medium, fine and superfine varieties are produced. Some of these are given beautiful designs and attractive colours. In the different places and in the production of different varieties of mats, the same traditional instruments are used. This might be due to cheapness of the instruments costing only around Rs.100/-. This can be replaced without incurring much of a cost by different types of tools for the production of different varieties of mats. There is scope for the use of better and more upto date implements in the production of finer varieties of mats.

In conclusion, it has to be pointed out that in spite of planning for the last 30 years, the twin problems of mounting unemployment and increasing concentration of wealth are defying solution. Encouragement of small-scale and cottage industries will go a long way in reducing unemployment and in the dispersal of income that is newly generated. An underdeveloped country like India is characterized by low levels of capital formation but at the same time labour is in abundance. Therefore, wherever possible it is necessary to give special assistance to capital scarce and labour intensive industries. The mat-weaving industry of Tamil Nadu is one in which capital investment is very small but employment potential is very high. Therefore, any programmes aimed at reducing unemployment and ensuring more equitable distribution of incomes generated should give pride of place to such labour intensive industries. The Korai mat weaving industry in the Thanjavur District of Tamil Nadu is labour intensive par excellence.

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ECONOMICS OF MAT (KORAI) WEAVING IN THANJAVUR DISTRICT

QUESTIONNAIRE

1. Name ..
2. Age ..
3. Religion : Caste : Sub-caste:
4. Name of the place ..
5. Taluk ..
6. District ..
7. Name of Craft ..
8. Serial No. ..
9. No. of visits ..
10. Investigated by ..
11. Date ..
12. Checked by ..
13. Name & Address of the
 Establishment ..

GENERAL INFORMATION

14. Academic qualification
 of the person ..
15. Mother tongue ..
16. Vegetarian or
 Non-Vegetarian ..
17. How long have you been
 employed in this
 District ..

18. When started ? :
- 18A. Residential address :
19. Establishment :
- a) Self :
- b) Inherited :
- c) Purchased :
20. Whether registered ? ... Yes ... No
- Under what act or regulation Year
21. Type of ownership of the establishment :
- a) Self owned :
- b) Partnership :
- c) Co-operative :
- d) Private Limited :
- e) Public Limited :
- f) Any other :
22. Whether (1) Individual :
- (2) Joint Family :
23. If (1) of the above, what is the income of the family
- Through (a) Job :
- (b) Other sources of Income :
- Total Income :
24. Whether outside labour is employed : Yes No
25. Conditions of work during the year : Name of the month :
- 1) Busy :
- 2) Normal :
- 3) Dull :
- 4) No work :

26. Living in own house/rented

1. Type of house : Hut/Tiled/Pucca

27. Do you take any regular holiday : Yes No

28. If yes 1. When :

2. How many days in a year :

29. No. of days not worked during last year :

30. Why not : 1. Festival :

2. Sickness :

3. Lack of money to purchase :
raw materials and tools

4. Any other :

31. Age and sex composition :

Sl. No.	Name	Sex	Age	Relation to the Head of the family	Marital status	Literacy level	Earning Member	Monthly income
1	2	3	4	5	6	7	8	9

32. Whether your family possesses :

Things No. or extent worth

1. Lands

2. Houses

3. Radio-Transistor

4. Jewels - Gold

32. 5. Bronze - copper - vessels

6. Silver

7. Watch

8. Cycle

9. Fan

33. Capital savings and expenditure :

1. Fixed capital :

2. Working capital:

3. Loans :

a) Government

b) Relative's & Friends

c) Middlemen

d) Banks

e) Co-operatives

f) Pawn Brokers

g) Others

Interest with or without
mortgage

34. Normal savings per month :

35. Mode of savings : 1) Post Office

2) Bank

3) Chit

4) Others

36. Objectives of savings :

37. Do you own tools and implements:

Yes

No

38. If no savings state the reason :

39. Normal expenditure per month :

- | Things | Rs. | Ps. |
|-------------------------------------------------------|-----|-----|
| 1) Food | | |
| 2) Clothing | | |
| 3) House rent/maintenance | | |
| 4) Education | | |
| 5) Recreation | | |
| 6) Festivals | | |
| 7) Others - Smoke, Shaving-snuff-coffee-Tea-Soda (etc | | |

40. Details of raw materials used :

- 1) Name
- 2) Unit
- 3) Quantity
- 4) Value
- 5) Fuel & Lubricants etc. used - value

41. Source of raw materials :

1. Place (2) District (3) Distance (4) Foreign (5) Oth

42. Type of purchasing raw materials

- 1) Whole sale (2) Retail

43. Source of purchase

- | | |
|--------------------------|-------------------------|
| 1) From producer | (2) From Co-op. Society |
| 3) From Government | (4) From middle men |
| 5) From any other source | |

44. Difficulties to get raw materials

1. Seasonal
2. Higher price
3. Poor quality

45. Employment

1. Full time (A) Male (B) Female (C) Children
2. Wage Earners (A) Male (B) Female (C) Children
3. Family workers (A) Male (B) Female (C) Children
4. Total

46. Part time

1. Salaried (a) Male (b) Female (c) Children
2. Wage earners (a) Male (b) Female (c) Children
3. Family workers (a) Male (b) Female (c) Children
4. Total

47. Wages :

- | | Male | Female | Children | D/ Night
Mrs. Mrs. |
|----------------------|------|--------|----------|-----------------------|
| 1. Time wage | | | | |
| a) Dyeing | | | | |
| b) Weaving | | | | |
| c) stitching | | | | |
| d) Others | | | | |
| 2. Piece wage | | | | |
| a) Dyeing | | | | |
| b) Weaving | | | | |
| c) stitching | | | | |
| d) Others | | | | |

48. Production :

- 1) Name of the article**
- 2) Unit**
- 3) Quantity**
- 4) Value**
- 5) Others**

49. Production on what basis :

- 1) After receiving orders**
- 2) In anticipation of demand**
- 3) Government store-purchase**

50. Adequate demand for goods Yes No

51. If 'no' state the difficulties

- 52. If 'yes' (1) Competition from other countries**
- (2) Competition from machine made goods**
 - (3) Locally**
 - (4) Others**

53. Marketing :

- 1. Who are the customer ?**
- 2. Persons who have advanced money**
- 3. Persons who have advanced raw materials**
- 4. Co-operatives have advanced money**
- 5. Co-operatives have advanced raw materials**
- 6. Government lend loan, subsidy**
- 7. Government has given concession and help**
- 8. Middlemen**
- 9. Dealers in other places :**
 - 1. Place**
 - 2. District**

53.

10. Directly to foreign countries

11. Any other

54. In selling your products whether :

a) You go to others

b) Others come to you

55. State the difficulties in marketing your products

56. Have you remedies to suggest

57. Designs : (a) Tradition oriented

(b) Partly modern

(c) Mostly modern

58. Counts : (a) Hundred

(b) Eighty

(c) Sixty

(d) Forty

(e) Coarse variety

		Counts	Value
59.1. Dinner mats	..		
2. Prayer mats	..		
3. Sleeping mats	..		
4. Bed cover	..		
5. Window cover	..		
6. Wall hanging	..		
7. Table mats	..		
8. Children mats	..		
9. Wedding mats	..		
10. Guest mats	..		
11. Others	..		

60. Is it easy to assess modern designs Yes No
61. If 'no' state the reason
62. Training :
1. Is there any training facility Yes No
 2. If 'yes' what facility
 3. If 'no' state the reason
 4. What type of training
 5. Period of training
 6. Where or place
 7. Stypend (a) Monthly (b) Weekly (c) Yearly
63. Is it improve your craft Yes No
1. If 'yes' state reason
 2. If 'no' state reason
64. Cost structure
1. Name of the product
 2. How many days one work on it
 3. How many articles one prepares in a day
 4. Cost of important raw material
 - a) Kerali (grass)
 - b) Thread
 - c) Dye stuff - colours
 - d) tools
 - e) Fuels - Electricity, Lubricants etc.
 5. Other cost :
 1. Lighting
 2. Transport
 3. Packing
 6. Selling price
 7. Remarks

65. Organisation :

1) Member of a co-operative society

2) If 'yes' in (1) what type of society

3. Extent of help

4. If 'no' (1) state the reason

5. Member of other association :

a) Name of association

b) Extent of help

c) If 'no' in (2) state the reason

16. Are you satisfied with this work ?

17. Do you want the work to be carried out by your successors ?

18. Why you select this work ?

19. Do you enjoy complete mental peace and happiness

CHAPTER - I
REVIEW OF THE STATUS OF SHRIMP AQUACULTURE
IN THE ARTISANAL SECTOR

Aquaculture has gained momentum throughout the world in recent decades which is probably unparalleled in other spheres of food production. Rearing fish, prawn and other aquatic organisms for food is to a large extent based on very old methods. All the traditional methods together with their modern technology counterparts are commonly described as aquaculture.

Aquaculture is the farming of aquatic animals and plants for commercial purposes. Aquaculture, as a promising primary and alternative agricultural enterprise and as a source of livelihood for people, has grown considerably in recent years. Its role in promoting rural development, generation of employment and earning foreign exchange is being increasingly appreciated around the world, particularly in developing countries.

The annual world wide harvest of fishery products from the oceans has more or less remained static for the past few years at about 70-72 million tonnes. Yet the population has crossed the billion mark and is expected to double in the beginning of the twenty-first century. Hence the demand for fishery products has increased with increasing population and income. In order to meet the demand for fish in the world, fish production must double its present level of catch by the year 2000. Both researchers and

ers are striving hard to develop useful techniques to meet goal through fish and prawn farming apart from sification of capture fisheries.

Aquaculture industry is well its way to solving the ems of production and growing demand for animal protein. culture produced about 10.2 million tonnes of fish and other ic products equal to 13% of the total world fisheries est. Interestingly all the first five leading countries such hina, Japan, India, South Korea and Phillipines are in Asia, account for 75% of total global aquaculture production. If world's aquaculture production is projected for the year 2000 on productivity growth, it will amount to about 22.2 million s or about double the present level of production. At this aquaculture will account for approximately 25% of the total istribution of world fisheries production.

The fisheries resources are renewable and are available after year, if their stocks are suitably utilized and ed. Increasing and indiscriminate fishing in both marine and guous coastal waters considerably dwindle the marine fishery l. Due to increasing demand for prawn in overseas market, the rmen explore even the undersized prawn for local market. indiscriminate fishing, especially in the nursery areas, derably reduce the adjoining marine prawn fishery. This ping danger due to over exploitation of spanners and nursery ation should be properly adjudicated and remedial measures as aquaculture oriented fishery management aspect should be oped to rehabilitate the fishery potential, and procure