



APPLICATION OF HENRY GARRETT RANKING TECHNIQUE TO ELECT THE PREFERENCE OF INFLUENCING FACTORS OF COIR INDUSTRIAL GROWTH

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ABSTRACT

The coir industries are a traditional cottage industry that relies on agriculture and is labour-intensive. Despite the fact that there are more registered coir units in India than ever before as a result of the substantial demand for their goods on the international market. The industrialists are still dealing with problems at the manufacturing-level even though the industries evolution is moving in the right path. The main aim of this study is more than ten elements that have the greatest impact on the development of the coir industry. The core data for this study will be collected from the respondents through a structured questionnaire, with the researcher using a random sample technique and Henry Garrett's ranking technique was applied to determine preferences. This study finds that industrialists need assistance in the areas of product distribution, research and development, and technological upgrading. If the government and appropriate authorities take action to put more emphasis on these influencing factors, it will be more advantageous to increase the growth of coir manufacturers and the labour force who work in the coir business.

KEYWORDS: Coir industrial growth, Coir products, Production and export, Garret ranking.

1. INTRODUCTION

One of the most significant cottage and traditional agro-based industries in India is the coir industry, and coconut husk is an essential raw material for this sector. Rural locations with a concentration of coconut-producing regions are home to the majority of the world's coir industries. India's coir industries got their start in Kerala in the nineteenth century (Coir Board). Over the years, the businesses have begun to expand into other coconut-growing states in India, including Tamil Nadu, Andhra Pradesh, Karnataka, West Bengal, Pondicherry, Maharashtra, Delhi, Uttar Pradesh, North Eastern Region, and Lakshadweep (Mohanraj and Latha, 2017; Rameez 2014). There are currently 16,706 coir units that have been registered in India. The registration of this coir unit has resulted in the creation of work possibilities, which have benefitted 7,40,834 persons living in rural areas (Annual Report of Coir Board 2020-2021). Another perspective of coir industry is about their number of advantages, including the fact that its products are environmentally friendly, biodegradable, made from renewable natural resources, do not contribute to pollution, and have a product usage level is up to expectation placed on them. In addition, the competitive pricing, skilled craftsmanship, alluring qualities, and overall superiority of the items all contribute to the ever-increasing demand in international markets. The industries produce a wide variety of goods, such as fibre, pith, chips, fibre bundles, pith blocks, pith substrates, handloom mats, tufted mats, power loom mats, rubberized coir, rugs, carpets, geo textiles, baskets, brushes, brooms, gardening tools, and crafts (Nagaraj and Basavaiah, 2011; Praveenkumar 2017; Manikandan and Vidhya 2022). India is supply more than two thirds of the world's coir and coir products, and this percentage is expanding rapidly. Kerala is the epicentre of the coir business in India, particularly for the production of white fibre, which accounts for more than 85 percent of all coir commodities and 61 percent of all coconut production. The majority of Indian businesses involved in international trade are currently shipping coir goods to a diverse range of countries throughout the world. Over one hundred and six countries throughout the world get these goods as exports. The United States of America and China are among the largest importers. The United States of America is continuing to be the most important market for the export the coir items made from India, accounting for 26.51 percent of the total quantity and 39.34 percent of the total value. During the period of March 2022, the value of coir goods exported was 2,589 billion rupees (IBEF,



2022). Even if the industries have reached the international market, industrialists are still confronting problems in industrial operations, and this is causing the rise of the industrial sector. Inconsistency in product demand and price, payment delay in selling through intermediaries, absence of expert's consultation in export related activities, lacking of product innovation, a smaller number of beneficiaries alone avail the government subsidies and international trade fairs were the features that caused the growth of the industrial sector. All of these aspects contribute in some way to the overall growth of the sector. With the use of the garrett ranking technique, the current study makes an effort to determine which component has the most impact on the expansion of the coir industry. As a result, this study has been carried out in order to identify a factor that has an impact on the expansion of the industrial sector.

2. LITERATURE REVIEW

Rajkumar (2017) centred on the investigation of issues faced by coir product manufacturers and exporters in the Pollachi taluk of the Coimbatore district. The purpose of this study was to evaluate the exporters profile as well as the nature of the challenges that are encountered by the exporters of coir units in the Pollachi Taluk. This study followed the primary data and used a technique called random sampling to collect the data. Three hundred different samples were gathered from the area under investigation in total. According to the findings of the study, coir manufacturers and exporters in Pollachi Taluk are small business owners, and the majority of the unit ownership is handled by sole proprietors. These businesses have a minimal number of employees, fewer industrial activities, and lower initial investments. The study looked into 17 different elements that contribute to the challenges that coir manufacturers and exporters are up against. The garrett ranking technique was applied in order to ascertain which of the factors being considered by the respondents was held in the highest regard. According to the respondents, the important elements includes a lack of consultation services, a delay in payment from international traders, export restrictions, the requirement of expensive capital for export activities, and difficulties in obtaining support from the government. The report recommended that policy makers, relevant bodies, and volunteer organisations provide support for small-scale industries.

Ao and Jamir (2020) examined the challenges that farmers encounter when trying to cultivate bamboo. Primary data were used for this study, and information was gathered from bamboo producers using a questionnaire of a prespecified style. The study was conducted out in the Mokokchung district of Nagaland, and the sample size was 116. The primary data was acquired through the use of a technique known as random sampling. The information on their problem was acquired through secondary data as well as from farmers who planted bamboo. On the basis of the information, there are eight factors scrutinised. A number of factors come into play, including work culture, credit facility, transportation, machineries, marketing, labour supply, and storage availability. The respondents are asked to rank all of these factors, and then those rankings are analysed using the garrett ranking technique. The result of this study, which was determined by the choices of the respondents, found that problems with marketing, a lack of labour, and a lack of transportation facilities were heavily highlighted by farmers and that these were their primary concerns.

Ashok et al., (2020) explored the difficulties that local farmers in the Sambalpur district of Odisha face in obtaining and repaying the agricultural loans. The primary purpose of the research was to determine the various available sources of agricultural financing in the area under study the method of multistage stratified random sampling was applied by the researcher, and the sample size that was selected for this investigation was 200. Personal interviews were used as the primary technique of data collection for this research. The respondents were asked to rate nine factors in order to conduct an analysis of the difficulty that farmers face in getting and repaying credit. Time availability, document expenditures, collateral security, lengthy procedures, delayed release, limited credit, and higher loan rates are the contributing reasons. The researcher made use of the garrett ranking technique in order to determine which option had the most preference among the respondents. According to the findings, the most significant problems that the respondents encountered when attempting to obtain a farming credit were the inability to obtain a loan in a timely manner, the increased difficulty that farmers encountered while completing the necessary paperwork, and the increased costs associated with producing the necessary documentation. As per findings of the research, the government should restructure the way it provides loans to farmers in order to satisfy the farmers' demand for credit.

Sama et al., (2019) tried to examine the aspects that buyers consider while making decisions associated with the purchase of smart phones. The purpose of the study was to determine rankings for various mobile features, operating systems, and brands. This study relied on primary data, and the information was gathered from smartphone users by structured questionnaires that was carefully designed. In order to compare the features of the



most popular mobile brands, this study chose 16 different mobile phone manufacturers. The ten most important characteristics of these mobile phone brands are taken into consideration for this research. The garrett ranking approach was utilised in order to determine the preferred option. According to the findings of the research, the features of mobile phones that have the most impact are cameras, RAM, and battery capacities. Apple's iOS is the most popular mobile operating system, and the iPhone, Samsung, Vivo, and OPPO brands are the most popular mobile and preferable.

3. METHODOLOGY

The Pollachi Taluk of Coimbatore District was the location where the study was conducted. In order to acquire the primary data, a technique used was random sampling, and 94 samples were subsequently collected. The main industrial sectors, in particular fibre extraction and pith units alone, served as the target group for the sample. The interview method along with a standardised questionnaire was used to collect the data. In this section, a total of 12 factors related to the growth of the coir sector were gathered. The owners of industrial businesses were interviewed and asked to rank the factors that influence growth in their industry. There is room for variation in the rank that is assigned to each respondent. Therefore, in order to analyse the factors that influence growth, the Henry Garrett Ranking Technique from 1969 was utilised to determine which option is preferred by the respondents.

4. APPLICATION OF THE GARRET RANKING TECHNIQUE

In general, research is followed a formal way, and include various steps to address the research problem and the study results are gathered through a systematic structure. Additionally, it should also not be the irregular way of getting the results from improper methods, as this would be considered as unjustified results. To consider this note, in this study the information is appropriately analysed using the garret ranking technique. The most important factor influencing the respondent was determined using this technique, which involved ranking the order of merit the respondents had provided. This strategy involved asking respondents to rank all of the factors. The following Garrett formula was used in the first stage to get the percent position of each rank:

$$\text{Percent Position} = \frac{100 (R_{ij}-0.5)}{N_j}$$

Where

R_{ij}= Rank given for ith item by the jth individual

N_j= Number of items ranked by jth individual

The tables that follow show the results of a calculation of the percentage position, the garret value, the ranks supplied by respondents, and the ranking order among the factors that influence the growth of the coir industrial sector.

Table 4.1: Percent Position and Garrett Value

Sl. No	Percent Position [1000 (R _{ij} -0.5)/N _j]	Percent Position Value	Garrett Score
1	100(1-0.5)/12	4.17	83
2	100(2-0.5)/12	12.5	73
3	100(3-0.5)/12	20.83	66
4	100(4-0.5)/12	29.17	61
5	100(5-0.5)/12	37.5	57
6	100(6-0.5)/12	45.83	52
7	100(7-0.5)/12	54.17	48
8	100(8-0.5)/12	62.5	44
9	100(9-0.5)/12	70.83	39
10	100(10-0.5)/12	79.17	34
11	100(11-0.5)/12	87.5	27
12	100(12-0.5)/12	95.83	17

It was helpful to determine the score by referring to the chart that Henry Garrett and Woodworth had provided back in 1969. The preference was ranked using these 12 different scales for this study. The garrett scores and percentage position values that were generated and given in Table 4.1. Table 4.2 displays the outcomes of the recorded rankings for each factor that was considered.



Table 4.2: Number of Ranks Given by Sample Respondents

S. No	Factors	Rank Given by the Respondents											
		1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th	12 th
1	Factor-1	50	0	0	8	0	0	22	9	0	5	0	0
2	Factor-2	0	0	0	16	50	0	14	6	0	8	0	0
3	Factor-3	0	24	6	16	0	48	0	0	0	0	0	0
4	Factor-4	0	0	0	8	0	6	0	0	8	42	8	22
5	Factor-5	5	0	8	0	0	0	0	24	6	11	9	31
6	Factor-6	8	37	9	0	0	8	0	8	15	0	0	9
7	Factor-7	8	0	8	31	16	0	17	0	0	14	0	0
8	Factor-8	0	0	0	15	14	24	33	0	8	0	0	0
9	Factor-9	6	7	9	0	0	8	0	8	34	14	0	8
10	Factor-10	17	9	54	0	6	0	8	0	0	0	0	0
11	Factor-11	0	0	0	0	8	0	0	39	23	0	8	16
12	Factor-12	0	17	0	0	0	0	0	0	0	0	69	8

Source: Primary Data (2023)

Table 4.3: Estimation of Average Score of the Total Respondents

S. No	Factors	Rank Given by the Respondents												Total	Average
		1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th	12 th		
1	Factor-1	4150	0	0	488	0	0	96	396	0	170	0	0	5457	58
2	Factor-2	0	0	0	976	2850	0	672	264	0	272	0	0	5034	53.55
3	Factor-3	0	1752	396	972	0	2496	0	0	0	0	0	0	5616	59.74
4	Factor-4	0	0	0	488	0	312	0	0	312	1428	216	374	3130	33.29
5	Factor-5	415	0	528	0	0	0	0	1056	234	374	243	527	3377	35.92
6	Factor-6	664	2701	594	0	0	416	0	352	585	0	0	153	5465	58.13
7	Factor-7	664	0	528	1891	912	0	816	0	0	476	0	0	5287	56.24
8	Factor-8	0	0	0	915	798	248	1584	0	312	0	0	0	4857	51.67
9	Factor-9	498	511	594	0	0	416	0	352	1326	476	0	136	4309	45.84
10	Factor-10	1411	657	3564	0	342	0	352	0	0	0	0	0	6326	67.29
11	Factor-11	0	0	0	0	456	0	0	1716	897	0	216	272	3557	37.84
12	Factor-12	0	1241	0	0	0	0	0	0	0	0	1863	136	3240	34.46

Source: Primary Data (2023)

The multiple values of recorded rankings with garrett values are displayed in the above table 4.3. The row-by-row calculations include finding the sum and the mean of each factor. The garrett rankings serve as the basis for assigning the provided mean values. It is generally accepted that the most important factor is the one that has the highest mean value. The following table 4.4 shows rank for each factor based on their average value.

Table 4.4: Garrett Ranking

S. No	Factors Influence the Growth of an Industry	Average	Rank
1	F1-Regular Raw Material Availability	58	IV
2	F2-Consistency in Product Demand	53.55	VI
3	F3-Channel of Product Distribution	59.74	II
4	F4-Product Details and Innovation Plays a Vital Role	33.29	XII
5	F5-High Investments out-turns the Excellent Growth	35.92	X
6	F6-Technology Modernization Leads to Better Growth	58.13	III
7	F7-Employing the Skilled Labours can Boom the Industry	56.24	V
8	F8-Market Expansion Leads to Increase the Production	51.67	VII
9	F9-Direct Selling is Best Rather than the Intermediaries	45.84	VIII
10	F10-Need Research and Development for Increase the Growth	67.29	I
11	F11-Participating in Trade Fairs Generates the Marketing Awareness	37.84	IX
12	F12-Government Subsidies are very much Helpful for an Industrial Growth	34.46	XI

Source: Primary Data (2023)



5. RESULTS AND DISCUSSION

5.1 Need research and development for increase the growth

As per the preferences of the respondents, the research and development factor that has the largest impact on the expansion of the coir industry. As a result of the fact that the coir industry is traditional cottages still the industrialists are following the traditional processes in both the manufacturing and disposal stages. During the defibring process an accident are caused by an insufficient safety features in the machinery that is used. To get rid of these kinds of process in the industry, it demands creative and novel approaches in order to sort out the outdated industrial activities. The forthcoming innovative approaches ought to be the industry's lead to an environmentally friendly economic boom.

5.2 Channel of product distribution

The industry is expanded in part by the product distribution. In addition to avoiding brokerage fees for raw material as much as possible, the direct sellers must consider delivery timing, mode of transportation cost, product safety during exchange, and warehouse facilities while distributing the products. A poor distribution process might often cancel finished goods to reach their target consumers. As a result, the finished goods are dumped into the warehouse. To avoid this kind of problem, Industrialists should primarily focus to build the product related network to distribution process. However, direct sale or middlemen or both the ways the products have to distributed by the most cost-effective way to clients at the right moment. So, the manufactures can avoid the poor product distribution for improve the relationship between owner and customer.

5.3 Technology modernization leads to better growth

This component was ranked as the third most important factor to influence the rapid industrialization based on sample respondents. Even though the industries have grown from small-scale cottage operations to medium-scale businesses but existing machinery still has to be upgraded. Like, machines are required for the phases of husk retting and beating, drying the fibre and pith during the wet season, and screening and filtering equipment's are needed in order to remove mud and stone from the products to improve the quality. Additionally, the industry lacks the machineries for quick processes. The main reason for less product quality and worker illness is due to inadequate and outdated machinery. The majority of the respondents cited cost of the machineries are not affordable and the requirement of trained labourers to use these machines as their main reasons for not accepting the upgraded version.

5.4 Regular raw material availability

The problem of seasonal lacking of raw material poses challenges for industrialists, and those materials rate also fluctuates according to the different seasons. More than 50,000 coconut husks are required in order to keep the industry running during both shifts. If there is a scarcity, industrialists will work less hours, which will cause a delay in the delivery of the finished product. These businesses are mostly supported by bank loans due to chronic lack of raw materials; industrialists are unable to make their loan payments on time. For an industrialist, this leads in an additional burden.

5.5 Employing the skilled labours can boom the industry

The coir industry is one that relies heavily on human labour. When it comes to labours point of view, a small-scale industry requires more than 15 people every day and manpower is required at each stage of the coir manufacturing process. Moreover, manpower required for separating the coconut from the husk to packaging the final goods. So, the industry needs skilled labours to do their tasks in a more efficient manner. The industrialists frequently encountered the problem of labour shortage as a result the large amount of manual work, working in open space, and bad working conditions. Therefore, the industrialists who are intent on finding a solution to the problem are in a position to sustains the workers.

5.6 Consistency in product demand

The majority of respondents believe that higher consumer demand will be the primary driver of expansion in the manufacturing sector throughout the year. In contrast, the pre-monsoon season is the only time of year when demand for the commodity is at its highest level; throughout the other seasons, demand for the product is at its lowest. Therefore, it is necessary to first stabilise the demand for the product, evaluate the competition, and then diversify the marketing and sales techniques. Demand and pricing for the items should stay at a steady level in order to avoid the growth of the industry becoming stable for an extended period of time.



5.7 Market expansion leads to increase the production

The fundamental objective of manufacturing industries is to broaden the distribution of their products to more parts of the global market. Demand for a product grows in proportion to the size of the market expands. However, the situation was somewhat different in the sample area because the industrialists there are not up to date on the most recent marketing trends. This results in a decrease in production and leads to the dumping of products. In addition, the majority of the industries are concentrated in rural areas, which also has a high concentration of the total number of industries. Therefore, assistance in the field of expanding markets will be beneficial to the coir businesses.

5.8 Direct selling is best rather than the intermediaries

As a result of a general lack of market knowledge among manufacturers, the majority of them are forced to sell their finished goods through intermediaries. It will have an effect on their income through the prices they charge for their products. If the makers offer their goods offered for sale to the end users without going through an intermediary, they have a much better chance of generating a significant income for themselves. In addition to this, they will receive orders on a consistent basis and will sell their items while maintaining their profit margin.

5.9 Participating in trade fairs generates the marketing awareness

Trade fairs and exhibitions are becoming increasingly important in today's world. Because of this, a space will be created for new innovative ideas, and it will also unify the manufacturers who work on a micro and medium size. In order to collaborate and advance the coir industry in today's global market need this information. The Indian Coir Board is extending an invitation to all of the country's businessmen to take part in trade fairs that are being held all over the world. It was a reward for the coir industrialists who are outstanding in the creation of their products and export them to a variety of countries. However, this prize is only beneficial to a small number of people. Therefore, the government of India ought to organise and expand the number of trade fairs and exhibitions that take place across the country, and it has to attract and invest foreign importers.

5.10 High investments out-turns the excellent growth

The performance and growth of an industry drag it from the level of cottages and traditional businesses to the level of medium scale industries. If industrialists spend more money on investing in machines and vehicles, this would lead to a reduction in the amount of labour required and less usage of water. Because many times industries are faced with the dilemma of a lack of available labour as well as a lack of available water. In addition, increased investment makes it possible to expand both the production scale and the number of value-added units.

5.11 Government subsidies are very much helpful for an industrial growth

The majority of respondents have not profited in any way from any of the government's subsidies because there are a lot of rules and regulations to follow when applying for the subsidies, the process is time consuming, and the processing of the funds will take time. Therefore, the government should immediately begin the process of subsidising industries, as this will facilitate economic growth. Another category of the respondents is completely oblivious to the subsidies that are associated with the coir industry.

5.12 Product details and innovation plays a vital role

There is no proper industrial name, logo, specifics of product property, and instructions for use and not at all given by the majority of the coir production units, and these details are not included at all when the product is being sold. Through manufacturing exporters also not considering this part. Because most of the industrialists are not converting their goods as value added units due to so many reasons and fewer innovative products only exists, which will inevitably lead to dumping the finished goods.

6. CONCLUSION

The expansion of the coir business over the past decade demonstrates development, as evidenced by the fact that additional elements are now impacting that industry's phenomenal growth. In this sense, one of the factors contributing to the growth of industry is research and development. Waste management is becoming more profitable because to research and development efforts in the business. Distribution of the items and continual improvement in technological capabilities are also crucial factors. These characteristics have the greatest influence on the growth of industry through their ability to improve and compete on the global market. The establishment of a regional centre for coir board intervention, monitoring, and guidance will be beneficial in bringing about stable growth in the industry.



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