MARKET POTENTIAL OF VALUE ADDED COCONUT PRODUCTS

By

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THESIS

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Declaration

DECLARATION

I, hereby declare that the thesis entitled **"Market Potential of Value Added Coconut Products"** *is a bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis for the award to me of any degree, diploma, fellowship or other similar title, of any other university or society.*

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CERTIFICATE

Certified that this thesis entitled **"Market Potential of Value Added Coconut Products"** *is a record of research work done independently by* **Ms. Sali, K.S.** *under my guidance and supervision and that it has not previously formed the basis for the award of any degree, fellowship or associcateship to her.*

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CHAPTER 1

INTRODUCTION

Agriculture forms the backbone of the Indian economy. It provides employment to around 62 per cent of the total work force in the country. It also plays an important role in the industrial and socio-economic development of the country. In Kerala, nearly 50 per cent of the population depends upon agriculture. A unique feature of the state is the predominance of cash crops and the major crops of the state are coconut, rubber, pepper, cardomom, ginger, cocoa, cashew, arecanut, coffee and tea.

Home gardens of Kerala are predominantly coconut based and these gardens have a crucial role to play in the agricultural scenario of the state. Eventhough it is a reality that economy of Kerala is historically centered primarily on coconut, the coconut industry is no longer a monopoly of Kerala. However, any set back of the industry is a matter of concern not only for the Keralites but also for the whole coconut industry of the country.

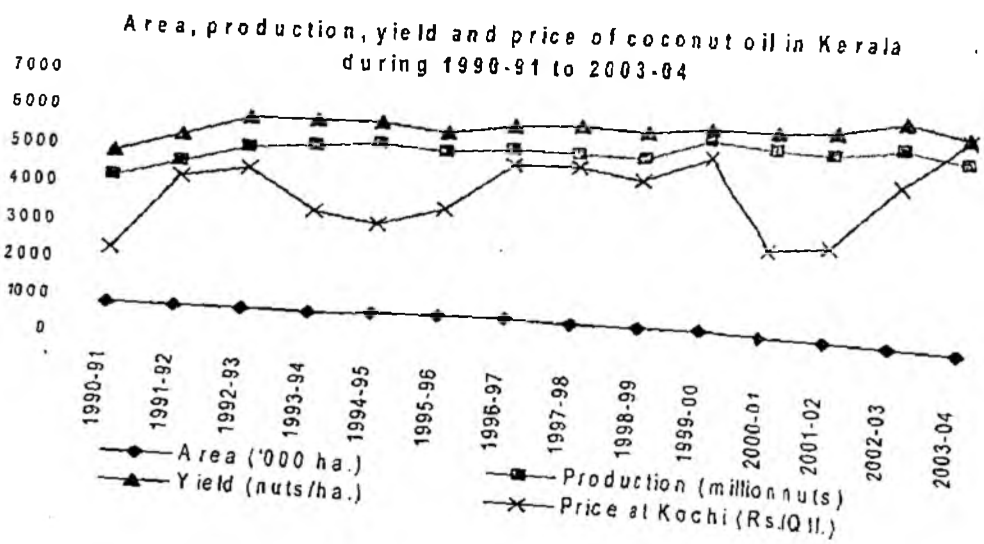
One of the important issues in the coconut industry is the frequent and erratic fluctuations in the price of coconut and consequently the coconut oil. When we closely examine the price trends of coconut and coconut oil, it reveals clear ups and downs. Different reasons can be attributed to this trend, primarily includes trends in area, production, yield and imports. Table 1.1 and Fig.1.1 present the trends in area, production and yield of coconut and price of coconut oil in Kerala during the period 1990-91 to 2003-04.

Table 1.1. Area, production and yield of coconut and price of coconut oil in Kerala during 1990-91 to 2003-04

Year	Area ('000 ha.)	Production (million nuts)	Yield (nuts/ha.)	Price at Kochi (Rs./Qtl.)
1990-91	870	4232	4864	2320
1991-92	863	4641	5377	4284
1992-93	877	5124	5843	4576
1993-94	882	5192	5885	3553
1994-95	911	5336	5857	3254
1995-96	914	5155	5638	3693
1996-97	902	5276	5849	4904
1997-98	884	5210	5891	4866
1998-99	882	5132	5817	4586
1999-00	925	5680	5980	5249
2000-01	926	5536	5980	3100
2001-02	906	5479	6049	3252
2002-03	899	5709	6349	4853
2003-04	906	5484	6052	6038

Source: Government of Kerala (2005)

Figure 1.1. Area, production, yield and price of coconut oil in Kerala during 1990-91 to 2003-04



With a coverage of 9 lakhs ha, coconut occupies 41 per cent of the net cropped area and provides livelihood to over 3.5 million families in Kerala. From the table, it is revealed that production has increased by 4.2 per cent in 2002-03 compared to the previous year and declined by 3.9 per cent in 2003-04 compared to previous year. The widespread attack of coconut mite and the consecutive droughts during south west monsoon of 2002 and 2003 could perhaps be the factors responsible for the decline in production. The average productivity has also slightly declined in 2003-04 by 4.7 per cent to 6052 nuts/ha compared to 6349 in 2002-03. The productivity levels in Kerala are also lower than other major producing states.

Value addition in coconut

Evaluating the trends in coconut oil price, it is felt that the product diversification and value addition to meet demand of farmers by ensuring consumer needs would be an approach to provide better price to farmers. Supplying new products in the market to meet the consumer demand generates employment opportunities through coconut based industries and allied activities, accelerate farm level processors directly and indirectly. Hence value addition in coconut through product diversification and by-product utilization are considered to be the core areas of development in the country to make Indian coconut industry robust and globally competitive. Until 1980, technology development for product diversification and value addition was not given adequate attention in tune with the increase in production and productivity. With the formation of the Coconut Development Board in early eighties, technological research and development of appropriate processing technologies became priority areas. The synergic and convergent efforts of the Board could lead to the development of technologies for the manufacture of new products from coconut, which inturn paved way for better utilisation of coconut parts.

The unstable prices and other market slips in the coconut sector have been adversely affecting the growth of the coconut industry in the country due to the dependency linkage on the copra and coconut oil price. The new initiatives launched by the Board in the field of product diversification and its promotion have resulted in a dynamic push and cushioning effect to the trade. The commercial introduction of various coconut products and by-products in the domestic markets and their aggressive market promotions have induced a definite segment shift to consumers' product choice and purchasing behaviour.

Value added coconut products

The range of products which can be produced from coconut are given below:

Products from inflorescence sap

1. Sugar/jaggery
2. Beverage (boiled sap)
3. Toddy (fermented sap)
4. Coconut wine
5. Neera (fresh sap)
6. Vinegar
7. Confectionery jelly

Products from coconut meat

A. Young coconut

1. Coconut syrup
2. Coconut jam
3. Puddings/ice cream

B. Matured coconut

1. Desiccated coconut
2. Partially de-fated coconut powder
3. Roasted coconut paste
4. Coconut chips/sweetened chips (sliced coconut)
5. Ball copra
6. Cup copra/coconut flour
7. Coconut yoghurt /ice cream
8. Fresh coconut gratings
9. Dehydrated edible coconut meat
10. Coconut oil/virgin coconut oil

Products from coconut milk

1. Milk powder (dehydrated milk)
2. Coconut milk/syrup
3. Coconut spread/cheese
4. Coconut honey/candy
5. Coconut skim milk beverage
6. Sweetened coconut skim milk blend
7. Coconut protein
8. Low fat/high fat coconut jam
9. Virgin coconut oil

Product from coconut water

A. Young coconut/tender nut

1. Tender nut water
2. Tender nut water and meat shake
3. Pouched/tinned tender nut water

B. Matured coconut

1. Coconut water concentrate (syrup) as beverage on dilution as coconut lemonade/pineapple/mango

2. Carbonated/non-carbonated coconut water

3. Nata de coco

4. Vinegar

5. Toddy

Many of the value added coconut products are new to the domestic market and hence the assessment of the market potential of such products is essential.

Market potential concept

When a company finds an attractive market, it must estimate that market's current size and future potential carefully. To develop effective targeting strategies, and to manage their marketing efforts effectively, companies must be good at both measuring current market demand and forecasting future demand.

According to Kotler and Armstrong (1996) some minimum level of sales would take place without any marketing expenditures. Greater marketing expenditure would yield higher levels of demand, first at an increasing rate, and then at a decreasing rate. Marketing efforts above a certain level would not cause much more demand. This upper limit of market demand is called market potential.

The need for determining market potential arises when scope of sales of the industry exists or alternatively if the industry has not reached a saturation point. Knowledge of market potential allows marketers to better allocate the money they spend on such marketing inputs as advertising, number of sales persons or outlets. For example, if one geographic region has three times the market potential, it should tend to receive three times as much marketing effort. In addition, because market potential provides marketers with a standard for comparison, they are in a better position to set sales goals, evaluate and reward the performance of sales force, and to generally assess the effectiveness of marketing efforts.

In this context, a study of market potential of value added coconut products becomes inevitable because it provides a general picture about consumers' awareness level, perception and current and future demand with respect to selected value added coconut products, in order to develop appropriate marketing strategies. Keeping this in view, the present study was taken up with the following objectives.

1. to measure the market awareness of value added coconut products
2. to examine the customers perception towards selected value added coconut products and
3. to assess the market potential for selected value added coconut products

Scope/Practical utility

The study analyzing the market potential of value added coconut products includes an exploratory search into the market awareness, consumption pattern, brand awareness, buying intention, motivational factors, consumers' perception and the expected demand for the value added coconut products.

Thus, the marketers in the field can utilize the results of the study to better allocate the money which they spend on different marketing efforts. Knowledge of market potential also helps the marketers to set their sales goal. In addition to this, the study will help the producers and dealers to develop and expand their market and this will inturn help the survival of farmers and the coconut industry.

Limitations

1. The study was restricted to 100 households of Thrissur Municipal Corporation area and there was not even a single respondent in the sample who was aware of and used all the selected products. Even if the sample size was increased, the percentage of users of all the products was not going to increase because of lack of awareness.

2. Although adequate precaution had been taken to minimize reporting bias on the part of the respondents, a certain degree of error or bias is likely to prevail.

3. The lesser number of users of some products in the sample had restricted the generalization of the findings.

4. Quantitative estimation of market potential was not made because, lack of awareness among the sample respondents created problems to get sufficient information.

Structure of the study

The thesis is divided into five chapters including the introductory chapter. The second chapter gives a comprehensive review of the available literature. The third chapter deals with materials and methods employed in the study which includes study area, study period, sample size, data base and statistical tools employed. The results and discussion of the study is presented in the fourth chapter. The last chapter presents the summary of findings and conclusion.

Review of Literature

CHAPTER 2

REVIEW OF LITERATURE

Review of literature is the part and parcel of all scientific investigation, which would enable the researcher to understand the research gap and justify the study. In this chapter an attempt has been made to cover the literature relating to the area of market potential of value added coconut products so as to develop and establish the theoretical framework for the study based on ideas and concepts expressed in various studies. It includes the literature relating to value added coconut products, market potential, market awareness and consumer's perception. The available literature are categorised under the following major heads:

2.1 Value added coconut products

2.2 Market potential

2.3 Market awareness and consumer's perception

2.1. Value added coconut products

Venkitachalam (1983) while examining the desiccated coconut industry in Karnataka observed that, of the total production of desiccated coconut industry in Karnataka, 25 per cent directly went to biscuit manufacturers and 65 per cent was sold through wholesale agents in upcountry markets and the balance was disposed off through retailers. Taxation was a factor which hindered the growth of the industry.

Raveendran (1984) studied the marketing of coconut in Lakshadweep Islands and reported that 2 per cent was consumed locally and the remaining was processed into copra. The entire copra produced (500-1800 tons) was marketed. Calicut and Mangalore were the important marketing centres for Island copra, which always fetched a premium price.

Venkitachalam (1984) worked out the marketing pattern of desiccated coconut industry in Tamil Nadu. He found that 30 per cent of the production directly moved from the factory for consumption by bulk consumers such as confectionery units. About 50 per cent was marketed through wholesalers/retailers in the upcountry markets in North India and 10 per cent in Southern States.

According to Arumughan *et al.* (1987) coconut processing is cumbersome; labour intensive, inefficient with inherent wastage and under utilisation. Because of the poor yield of milk at household extraction, the residue may contain nearly 50 per cent oil which is wasted. It is estimated that roughly 25,000 tonnes of coconut oil is wasted in this account alone. Processed coconut cream, if made available could avoid wastage and also ease the household drudgery to a great extent.

Janardhanan (1987) in his article on 'coconut in the age of processed foods' reported that procesing fresh coconuts to make instant spray dried coconut milk powder, is a product yet to be introduced in India, which is also a very promising proposition. With the availability of spray dried coconut milk powder, a variety of consumer food products could be produced to cater the domestic markets.

Krishnankutty (1987) in his article on 'new products from coconut' pointed out that a process has been developed for the production of partially defatted edible coconut gratings which can be used in many food preparations. Also the oil extracted in this process is of very good quality with very low free fatty acid content and a reasonably good shelf life.

According to Mall (1987) only about 50 per cent of installed capacity is being utilised by the desiccated coconut industry in Karnataka. The major problems encountered by the desiccated coconut manufacturers are the high cost of raw material and unhealthy competition in the market. Power shortage and price fluctuations are other factors which hamper the growth of this industry.

Narasimhappa (1987) reported that in recent years, demand for coconut oil has declined both in edible and inedible sectors. The continued high price margin, erratic price behaviour and short supplies coupled with certain policy measures of the government have been instrumental for this erosion of demand of coconut oil. As a consequence of this, other oils in both edible and inedible sectors are slowly replacing coconut oil.

Thampan (1988) while studying the coconut industry in India pointed out that for ensuring stability in the coconut based economy, it is essential to apply technological innovations in the field of product diversification and by-product utilization. According to him, by diversifying the use of coconut and it's products the present dependence on a single commodity ie, coconut oil could be avoided and the coconut based economy freed from the fluctuations will be experienced in the prices of coconut oil. He has identified various areas of diversification, viz., desiccated coconut, coconut cream, edible copra, soft drink, shell based products, vinegar etc.

Thampan (1988) pointed out that product diversification and by-product utilization hitherto been neglected areas in the Research and Development (R&D) programmes for coconut and as a result, the coconut based economy of the producing states in general and of the growers in particular continues to be unstable because of total dependence on fluctuating price trend of a single product ie. coconut oil. For ensuring stability in the coconut based economy it is highly essential to promote technological research and also to apply technological innovations already developed in other coconut growing countries in the fields of product diversification and by-product utilization.

Markose (1988) observed that it is essential to plan the diversification of coconut products and locate different coconut based industries in the best suited regions. Various products developed from time to time may be popularized and new uses may be identified for traditional products. Introduction of consumer packs on large scale coconut oil, desiccated coconut, coconut cream etc. will help to stabilize the price.

According to Arumughan (1991) though coconut cultivation and coconut based industry sustain millions of people in gainful employment in the country, the pace of modernisation in the post harvest processing sector had been very slow in the past mainly due to inadequate Research and Development support. Consequently, other than the traditional activities such as copra making, oil milling and coir processing no progress has taken place in the application of modern technology for the utilization of the different coconut products. Product diversification and product utilization have hitherto been neglected areas in the R&D programmes. As a result, coconut based economy continues to be stagnant because of total dependence on the fluctuating price trends of a single product ie. coconut oil. It is therefore, highly essential to promote R&D efforts in the area of product diversification and by-product utilization with an integrated approach to ensure stability to coconut based economy.

Bhat (1991) observed that the progress of post-harvest processing of coconut has been slow in India due to lack of Research and Development support. It is also pointed out that the main reason for unstable coconut economy in India is the fluctuating price trend of a single major item namely coconut oil. On the other hand, foreign countries like Philippines, Malaysia and Thailand have advanced to a large extent due to lower price.

Markose (1991) pointed out that post-harvest processing in coconut as such is limited to copra drying and oil milling. Development of appropriate processing technologies for the fuller utilization of the major products and by-products assumes considerable significance under the prevailing conditions in our country. At present the entire coconut industry is dependent on coconut oil. This situation creates considerable hardships to the farmers and processors.

Kumar (1994) studied the efficiency of coconut marketing in Kerala through inter and intra market integrations. The results of the analysis revealed a high degree of inter and intra market integration. However, relative differences existed in the efficiency of various coconut products in the markets. The canonical correlation results established that the inter market integration was brought about mainly by the oil price so that it become the price leader. This implied that those who controlled and manipulated the coconut oil market would succeed in controlling the coconut economy.

According to Sundaram (1997) marketing strategies and stress on popularizing non-traditional coconut products on a commercial scale should receive top priority.

Thomas and Venkitachalam (1997) conducted a study on investment opportunities in coconut in Tamil Nadu. They found that there is no in-built system at present prevailing for the marketing of tender coconut. However, the brokers directly harvest nuts from the garden and sell by themselves in many areas. There are wholesale merchants also who collect the nuts from the gardens and transport it in truck load to the major towns and cities from where again it is marketed through wholesalers and retailers.

Bhat (1999) conducted a study on coconut oil market and found that while all other edible oils are ruling 30-40 per cent lower than the previous years' (1998) price, coconut oil prices were 25 per cent higher than during the period last year (1998) at the Cochin market. One of the factors for this high price of coconut oil inspite of the easy availability of low priced palmolein in the state is the decline in the production of coconuts by about 10-15 per cent in Kerala. Moreover, Kerala's share in the total production of copra in the country has declined to 55 per cent from 90 per cent a few years ago. Another factor is the increased demand for refined coconut oil from the industrial sector.

Ganesan (1999) in his article on 'Technology for spray drying. coconut skim milk' pointed out that industrialization of coconut milk is the most promising commercial venture in the coconut mills at the beginning of this century. Industrialization will create a whole new range of higher value products which will not only increase export revenues but also optimize the utilization of coconut for local consumption and the by-products generated from the process. Diversification of the product mix could provide greater flexibility for a mill to respond to changes in the market demand and inturn more stability in the income of coconut farmers.

George and Pillai (1999) while studying the marketing strategy for stabilization of coconut prices, observed that the demand for coconut is consisting of two types, first is the demand for consumption as raw nuts and the second is for industrial purposes. Mumbai based oligopolies mainly control the market and they make the market nearly an oligopsony. The extent of influence of demand on the price of coconut is said to be difficult to be ascertained. They further commented that with the implementation of economic reforms and globalization of trade, the coconut economy of India is facing serious challenges as it is experiencing intense competition in international market and instability in domestic prices. Further steady fall in demand due to competition from cheaper substitutes has also contributed to price instability.

Ganesan (2001) pointed out that India lags behind in coconut post-harvest processing. No serious efforts have been made in India to improve the coconut economy and therefore the economy largely depends on single commercial product ie. coconut oil. Failure of coconut industry to diversify from its traditional nature is the major reason attributed to the slow pace of development of coconut industry.

Narayanan (2001) studied the economics of production and marketing of coconut in central region of Kerala. He pointed out that the factors that contribute to the price fluctuations apart from seasonality includes the manipulations done by the Mumbai based oligopolies and intense competition in the international trade as well as secular fall in demand due to competition from cheaper substitutes. It is essential to immediately implement all the possible steps to improve the low and fluctuating price situation by adopting cost effective methods and value addition of coconut and its products.

Varmudy (2001) in his article on need for diversification, pointed out that the coconut industry is facing severe crisis since 2000 in the form of a declining trend in the prices of coconut and its products. The main reason for this is attributed to the liberalized atmosphere and the import of palm oil. Apart from this, there are several other problems which include lack of attention towards product diversification and by-product utilization.

Sundaram (2002) pointed out that it is essential to give priority to value added products in the coconut plantation sector. Apart from coconut milk and coconut cream, some companies are producing vinegar and spray dried coconut milk. However, most companies are facing problems of lack of demand and consequently under utilization of capacity.

Anonymous (2003) in the report of 'International coconut summit', opined that the country's exports have been confined mainly to coir and coir products. At the same time, there is potential for export of coconut based products such as tender coconut water, coconut jam, vinegar, desiccated coconut, coconut milk powder, coconut shell and wood products.

Coronacian (2003) found that coconut kernel products traded in the international market includes copra, copra meal, desiccated coconut, coco chemical, coconut milk/cream/powder. Prices of these kernel products are generally interrelated and follow the pattern of coconut oil. when price of coconut oil in international markets increases, the price of other kernel products, except copra meal, also increase. Among kernel products, price of coconut milk powder is the highest, while copra meal is the lowest. Other kernel products that have high value are coconut milk, desiccated coconut and coco chemicals.

Devi *et al.* (2003) highlighted that the increasing levels of per capita income in India contribute to a promising domestic market for most of the processed commodities. The high literacy rate (especially female literacy), high level of women employment are also factors that promote the market for processed commodities. The changing social structure (joint family to nuclear family), food pattern (ready to use foods) and the life style also widen the market prospects for coconut based food products.

Khunt *et al.* (2003) in their study on economics of production and marketing of coconut in Sourashtra region of Gujarat, found that coconut cultivation is economically stable. However, the marketing sector is totally unorganized and the same needs a thorough revamping with long return vision oriented strategies. On the whole, as compared to mature nut marketing, performance of tender nut marketing was quite efficient looking to the value of price spread, producer's share in consumer's rupee and index of marketing efficiency. There is no organized marketing system for tender nut marketing in Junagadh district. The establishment of well organized coconut marketing co-operatives at wholesale as well as retail stage may help to safeguard the interests of coconut growers.

Mohandas (2003) found that the remedy for the poor competitiveness lies in aggressive product diversification and value addition to reduce the dependence on copra and oil as the price determinants. Rather than concentrating on all products it would be beneficial to focus on those products, which will have greater application in cosmaceuticals, oleochemicals, organic and functional foods and related areas. The lauric acid market and the bio-fuel and lubricants market also need to be exploited to the possible extent. Along with product diversification and product innovation market research and market promotion activities are also to be undertaken in a more aggressive and systematic manner.

According to Nampoothiri (2003), to sustain coconut cultivation as a profitable enterprise the policies should be focused more on "competitiveness through higher productivity". Therefore, it is necessary to find ways and means to put coconut into other alternative uses like tender nut, edible copra, desicated coconut, coconut cream etc. there by reducing dependency on price of coconut oil. In this context, value addition and by product utilisation are also very important.

Rathinam and Taufikkurahman (2003) pointed out that if coconut producing countries are successful to increase the production and productivity it will create an over supply of coconut oil in the market. It is necessary to enhance the alternative and high value applications to utilize the increased production of coconut and coconut oil products. The uses of coconut and its products including coconut oil as functional foods for the future will go a long way in providing nutritional security.

According to Singh (2003) the development strategy to revitalize the coconut economy in the country shall include (a) creation of opportunities for enhanced farm income and employment by integrating cropping/farming systems and reducing cost of cultivation by the use of low cost inputs (b) Efficient product and by product utilization both at on-farm and community levels (c) Formation of farmers' groups or co-operatives for marketing of coconut products (d) Promotion of organic production of coconut products (e) Strengthening of market intelligence to tap the domestic and export market and (f) Creation of awareness on the nutritional/health benefits of coconut so as to widen the consumer base of coconut products.

Singh (2003) highlighted that awakening and alertness on diversification of coconut with a motive to recapture the market have to be provided priority. Vast growth opportunities for product diversification and value addition exists. Despite this vast potential, the industry can flourish only through strategic initiatives and synergy among the organised and unorganised market outlets functions. Strategic marketing has to include strategies and product diversification and market intelligence backed by market research to widen the market base in different coconut growing regions.

Subburaj and Singh (2003) observed that marketing mix for coconut products varies among consumers in general and different income categories in particular. Yet, majority of consumers do not have high perception on coconut products. High income category finds difficulties with distribution mix, whereas other than high income category finds problems with price mix. Promotion mix therefore is to be designed and executed in such a way that it could address the expectation and wants of target consumers in general and potential consumers in particular. Since knowledge on coconut products contributes for high perception, the need to communicate the advantages and relative merits of coconut products is emphasized.

Zacharia (2003) found that in India, most of the coconut holdings are either small or medium. Value addition at farm level is not taking place in most of the holdings. The role of farmers is significantly less in processing and marketing. In this era of consumer acceptance only those who satisfy the consumer qualitatively and price wise will survive and withstand in the fray. Through small scale integrated processing and value addition, small and medium farmers can add extra income from unit area in unit time.

Chandrasekharan *et al.* (2004) in their study on exploring trade opportunities for coconut products, found that there is high potential for packed tender coconut water in far distant markets like Delhi. The survey revealed the overall preferences of consumers for packed tender coconut water over other bottled soft drinks on parameters like taste, health and hygiene. In order to improve the product awareness 42.6 per cent were in favour of media advertisement, 31.9 percent in favour of sales in melas whereas 25.5 percent suggested for increasing product availability, providing free sample, door to door canvassing and publicity among the youngsters.

The Hindu (2004) in the report of 'Entrepreneurs told to focus on value addition' it is explained that Kerala is lagging behind other states in producing value added products from raw materials. Though the state is rich in farm produce such as coconut and rubber, very little is utilized for value addition. More than 40 different value added products can be made from coconut, but most of them including coconut oil are made elsewhere and marketed in Kerala.

Mathew *et al.* (2005) observed that increasing demand for coconut for product diversification and decline in the production of coconut in some states had salutary affect on the prevalence of the higher price for coconut and its products. The availability of varied new coconut products in the domestic food chain markets increased tremendously the consumer demand for these products. The availability of packed and preserved tender coconut water in the non producing consuming centres evoked the fresh demand for tender coconut as a salubrious drink all over the country. The coconut and its products in the domestic market have established a strong link with the price discovery.

2.2. Market Potential

Studies on market potential were limited, especially those related to coconut products. However, the available literature on market potential were briefly examined and presented here.

Market Street Research Inc. (1996) found that the Household Eco Team Program has the potential for widespread acceptance among households within the geographic market surveyed, and more likely, nation wide. When given a representative script describing the programme, most people expressed an interest in the programme and very few thought they would be unlikely to come to an Introduction Event. Infact, 43 per cent thought they would be very likely to come, another 42 per cent thought they would be "somewhat likely" to do so, and only 13 per cent thought they would not. Large proportions responded positively to various components of the script such as children's involvement, opportunities to get to know neighbours, and opportunities to take environmentally responsible action and thus simplify one's life.

Anonymous (1997) studied the market potential for Digital Audio Broadcasting (DAB). Across six countries of Europe, 33 million families have been identified as prospective early adopters of DAB. They comprise 37 per cent of their 88 million households. For car radios specifically an early market potential of 18 million units has been established, amongst 21 percent of families were interested in DAB for the car (35 per cent of car drivers). For in-home DAB radios, an early market potential of atleast 25 million receivers has been established.

Green Car Institute (2000) quantifies current market size and estimates and forecasts demand for Neighbourhood Electric Vehicles in Master-planned communities. In addition, the study explores price and future expectations of consumers.

Pragnell *et al.* (2000) found that there is an underlying public interest in Smart Homes Technology that could be unleashed if the market develops and prices fall appropriately. Opinions were fairly mixed in relation to how interested respondents were living in Smart Home themselves. Less than half (45%) of those surveyed agreed with the statement "I am really interested in having the sort of functions a Smart Home could offer", while 37 per cent disagreed. The remainders (19%) of those surveyed were ambivalent about the prospect of Smart Homes living.

Biscos (2001) in his study on 'Digital Printing Market Potential' found that adoption of digital printing in the main stream graphic market is steady but incremental. Printers are finally making up the fact that digital printing offers a complement to rather than a replacement of their traditional services. In addition, printers reported that more than half of the jobs printed on digital equipment are for new applications rather than work migrating from traditional presses.

Whitten (2002) found that there is tremendous potential for health related commercial activity on the internet. Accessibility to health services via the web adds value in many ways that go beyond simple cost efficiencies. The e-pharmacy firm demonstrated the potential for more private and personal communication with an online pharmacist. The e-doctor company showed the potential value of assessing care in one's native tongue from anywhere in the world.

Sivakumar and Reddy (2005) conducted a study to find out market potential for "The Hindu" at urban and semi-urban areas and also to find out the satisfaction towards the service provided to the readers and to know what a reader expects from the news papers. This study provides an opportunity to know the ratings given to different aspects of coverage in different English news papers. The reasons that have caused the readers to go in for a particular news papers are apt information, supplements and prompt delivery.

2.3. Market awareness and Consumer's perception

Singh and Prabhakar(1989) who studied the consumer's perception of certain product features of steel almirah stated that on the basis of this perception a consumer would take the purchase decision and a particular brand was getting priority over other brands. They also observed that the marketers realise the importance of consumer perception and attempted to create a unique image for their products, which enables to achieve an advantage over their competitor's products.

Sundaram and James(1990) while examining the demographic and psychological factors that influence the pattern and selection in soft drinks and tetra pack drinks opined that soft drinks are subjected mostly to impulsive purchase and the impulse is to quench the thirst. Their brand preference is mostly subjective and not based on any knowledge of the content, quality etc. of the soft drinks unless the consumers are habitual in consuming a particular brand. They also added that 'taste' followed by advertisement is considered as the major factor for preferring a particular soft drink.

Mitali (1994) conducted a study among urban house wives and found out that the urban house wife is still traditional at heart, though she accepted a number of western concepts. She felt that packaged food is not as good as home made. Only one third of the consumers indicated their willingness to experiment new packaged products. She also added that compared to early years, a small portion of the households claimed to be buying more packaged food products.

Pande (1995) studied the problems of branded potato chips market and found that the share of branded market was very low. This was mainly because of high price charged for branded chips. Because of high packaging, distribution and marketing costs the manufacturers had to increase the price. As the consumers cared more for low price, they were not ready to pay a higher price just for good package and hygiene.

Singh (1995) while studying the consumer behaviour of urban people in Punjab towards walnut observed certain factors which influence the behaviour of consumers such as nutritive value, medical value, taste, relative cheapness, keeping quality and easy digestibility. He also indicated that the factors influencing consumption marginally differed among the various income groups.

Bhushan (1997) while studying the performance of Uncle Chips, a well known brand in potato chips, observed that middle class consumption attitudes were changing rapidly, the demand for instant food products was increasing and there was a general euphoria sweeping the market for all kinds of packaged foods. In case of potato chips, there was competition from the unorganised sector, which did not incur the costs of packaging and distribution, since they are sold locally.

A survey conducted by Kohli and Singh (1997) in the branded edible oil market observed that after years of advertising almost none of the major brands offered a differentiation, stronger than the name and main ingredient. As a result brand loyalty was less in edible oil market. The study also revealed that the consumer was totally confused and just asked for refined oil and retailer pushed the brand which gave him highest margin.

Subhalekshmi (1999) in her study on "Consumer behaviour towards selected agro-processed products" opined that increased popularity of branded products in urban area was mainly due to higher income, awareness levels, employment etc. She also added that better quality perception was the main reason that induced majority to purchase their brands.

The study made by Srinivasan *et al.* (2000) on "consumers' perception towards processed fruit and vegetable products" revealed that the consumers with higher level of education consumed more of processed products. Consumers preferred processed products because of convenience of 'ready to eat' form. He also pointed out that people preferred unbranded products mainly because of cheaper price and price was the most important factor which influenced consumption followed by quality, taste, nutritive value, packing and availability.

Venkateswaralu and Rao (2000) examined the price perceptions among the working class and middle income group people and identified that working class housewives have a greater reliance on the general belief that there is price quality association ie. higher the price, higher the quality.

Sangeetha (2002) while studying the consumer behaviour towards branded rice and rice products, observed that 'high quality perception' of the branded varieties was the prime reason for the purchase of branded rice and basmati rice.

'Convenience' was the prime factor that influenced the branded rice product users. The other major reasons reported for the purchase of branded items included taste and availability.

Palkar (2004) while studying the consumer preferences in purchase of ready to eat snacks found that the chips that are generally spicy and of salty flavours are preferred by children but they are not the decision makers. Most consumers are purchasing the product for time pass or for the taste as their prime reason. Hence the company may keep this in mind while devising the advertising.

Ravichandran and Narayanarajan (2004) who studied the factors determining the brand preferences of television with special reference to Thoothukudi district in Tamil Nadu found that advertisement plays a vital role in influencing the purchase decision of a particular brand of TV. It is also found that socio-economic factors such as sex, age, education, occupation and income influence the brand preference and motivate the buyers to choose the particular brand. Quality of product largely determines the buyer market.

Reddy and Rajarashmi (2004) studied the buyer behaviour of home appliances with special reference to microwave products in Bangalore city and found that majority of the respondents are aware of various brands of microwaves. Print media is the important source of information, since majority of the respondents are aware about microwave products through this media.

Ramana and Viswanath (2005) found that price, quality and taste have become the most influencing factors among all the categories of consumers than smell, colour and brand. Buying frequency tells that majority of the respondents ie., 66.50 per cent buy on a monthly basis, while the labourers are on a weekly basis. It is also noticed that change of price and quantity of buying have not influenced the buying behaviour of the consumers. However, non-availability of particular product forced some of the buyers to buy other brands.

Ramaswami *et al.* (2005) in their study on consumer behaviour towards instant food products revealed easy preparation (62%), good taste (61%). savings in time (58%), hygiene (60%), economy (40%) and nutritional value (36%) as the motivational factors. A large number of respondents (78%) laid emphasis on quality and 76 per cent felt that price is an important factor while 64 per cent attached importance to the image of the manufacturer and 50 per cent considered packing as an important factor and an equal percentage (50%) felt longer shelf life influenced them.

Materials and Methods

CHAPTER 3

MATERIALS AND METHODS

The present study analyses the market potential of selected coconut products. The rationale of such an exercise arises from the assumption that the results would provide some guidelines to the producers and dealers to develop and expand their market. This chapter provides the analytical framework for the conceptualized research problem, the methods and tools adopted in measuring and analysing the awareness and perception of consumers and the market potential of selected coconut products.

3.1 Conceptual exposition and operational definitions

The study uses various terms and concepts to analyse the objectives. They are briefly explained below:

Awareness:

Awareness is the first knowledge about a new idea, product or practice. In this study awareness was operationally defined as the consumers' state of having knowledge about coconut products.

Perception:

A process by which an individual selects, organises and interprets stimuli into a meaningful and coherent picture of the world.

Market potential:

Market potential is the limit approached by market demand within an assumed environment, as industry marketing effort approaches infinity.

Consumer:

Individuals and households who buy goods and services for personal consumption.

Product:

Product is anything that can be offered to a market for attention, acquisition, use or consumption that might satisfy a want or need.

Brand:

A name, term, sign, symbol or design or a combination of these intended to identify the goods or services of one seller or a group of sellers and to differentiate them from those of competitors.

3.2 Sampling procedure

3.2.1 Study period

The field level investigation was conducted during the months of July and August, 2005.

3.2.2. Study area

As processed products are more popular in urban areas, Thrissur Corporation area was selected as the study area. Out of the 32 divisions in the corporation area, four divisions viz., East Fort, West Fort, Koorkkancheri and Mailippadam were randomly selected for the study.

3.2.3. Selection of respondents

The sample size of the consumers was fixed at 100 due to limitations of time and other resources. The respondents were selected, 25 each from each division, on a random basis.

3.2.4. Selection of the products

For the purpose of the study eight products were selected. They are coconut oil, coconut milk, coconut milk powder, coconut palm jaggery, coconut chips, coconut vinegar, elaneer soda and neera.

3.3 Methodology

3.3.1. Data base

The study was mainly based on primary data collected through field level investigation. The data for the study were collected from the selected respondents through personal interview method by using a pre-tested structured schedule.

3.3.2. Measurement of variables and statistical tools used

Bivariate tables and percentages formed the basis of analysis. The other tools and techniques used for the analysis are described below.

3.3.2.1. Regression analysis

To examine the cause and effect relationship of income and expenditure, double log regression was made, $\log Y = \propto \beta \log x$.

3.3.2.2. Ranking

Ranking was used to analyse the factors influencing the purchase decision of selected coconut products. For ranking a K x N table of observed ranks for each product was formulated. Here 'N' is the number of objects ranked and 'K' is the number of judges assigning ranks. After preparing the table, the sum of ranks assigned to each character were found out. The factors are then ranked on the basis of the sum of ranks obtained by each factor. The parameter for which the sum of ranks is minimum is identified as the most influencing factor and ranked first. The parameter that obtained maximum sum of ranks is ranked last among the various factors.

3.3.2.3. Measurement of perception

The statements selected under perception of consumers towards coconut products were given in the interview schedule and the respondents were asked to express their agreement or disagreement to the given statement on a five point scale. The five categories of response were 'strongly agree', 'agree', 'no opinion', 'disagree' and 'strongly disagree' and the respective scores are +2, +1, 0, -1, and -2.

The next step is to compute the total score value of each statement by using the following formula.

Index value of a statement

$$= \frac{(f_1 \times 2) + (f_2 \times 1) + (f_3 \times 0) + (f_4 \times -1) + (f_5 \times -2)}{N \times 2} \times 100$$

where, f_1, f_2 .... = number of respondents on each categories of response and 'N' as the total number of respondents.

The maximum value obtained will be 100 and minimum value will be -100. The scale of response obtained was interpreted as follows:

Index value < 33.33 – Least favourable

33.33 to 66.66 – Moderately favourable

> 66.66 – Mostly favourable

3.3.2.4. Awareness index (AI)

Awareness index was developed to measure the awareness of consumers towards coconut products. The respondents were asked to indicate their awareness about various coconut products on a five point scale viz., 'not aware', 'slightly aware', 'moderately aware', 'mostly aware' and 'completely aware' with weights zero, one, two, three and four respectively. Based on this, the awareness index was calculated using the following formula.

$$AI = \frac{(f_1 \times 4) + (f_2 \times 3) + (f_3 \times 2) + (f_4 \times 1) + (f_5 \times 0)}{N \times 4} \times 100$$

where f_1, f_2 .... = number of respondents on each categories of response and 'N' as the total number of respondents.

The total awareness score for each product was obtained by summing up all the individual scores on awareness of each respondent. The individual scores of each product were categorised into three groups, based on the scores obtained.

They are:

1. Least aware group (< 33.3)
2. Moderately aware group (33.3 – 66.6)
3. Highly aware group (> 66.6)

3.3.2.5. Potential level index

Potential level index was developed to check whether there is demand for selected coconut products. The respondents were asked to indicate their buying intention about selected coconut products on a six point scale viz., 'no chance', 'slight chance', 'fair chance', 'good chance', 'strong chance', and 'for certain' with weights zero, one, two, three, four and five respectively. Based on this, the potential level index was calculated using the following formula.

Potential level index =

$$\frac{(f_1 \times 5) + (f_2 \times 4) + (f_3 \times 3) + (f_4 \times 2) + (f_5 \times 1) + (f_6 \times 0)}{N \times 5} \times 100$$

where f_1, f_2 ......= number of respondents on each categories of response and 'N' as the total number of respondents.

3.3.2.6. Potential to awareness index

Potential to awareness index was developed to compare the potential level with the awareness level of the consumers. The index was calculated by using the following formula.

$$\text{Potential to awareness index} = \frac{\text{Potential level index}}{\text{Awareness index}} \times 100$$

Results and Discussion

CHAPTER 4

RESULTS AND DISCUSSION

Coconut is the exclusive means of livelihood to millions of small and marginal farmers in the state. The bounded relationship between a common man and the coconut palm can be perceived from the role of coconut and its products in his social and cultural life. The crop plays significant role in poverty reduction and employment generation especially in the rural sector. Hence, the importance and demand of coconut is increasing day by day pointing to a bright future to the crop. The present study analyses the market potential of value added coconut products.

Keeping the objectives of the study in view, the results are presented under the following major headings:

4.1. Socio-economic profile of the respondents

4.2. Market awareness towards value added coconut products

4.3. Factors influencing the purchase decision of selected coconut products

4.4. Consumer's perception towards selected value added coconut products

4.5. Market potential of selected value added coconut products.

4.1 Socio-economic profile of the respondents

In this part, personal information such as age, sex, religion, family size, education, employment status, annual income and expenditure pattern of the family were analysed. An attempt is also made to find out the preference towards the purchase of agro-processed products.

4.1.1. Age of the respondents

Table 4.1 shows the age-wise classification of the respondents.

Table 4.1. Age-wise classification of the respondents

Sl. No.	Age (years)	Number of respondents
1	Below 25	1
2	25 – 40	16
3	40 – 55	43
4	Above 55	40
Total		100

Table 4.1 suggests that majority of the respondents belonged to the age group of '40-55' years closely followed by the age group of 'above 55'. Since the survey was conducted during the working hours, the number of respondents in the category of 'above 55' became large and majority of them are retired and available at home during day time. It is also observed that 16 respondents represented the age group of 25-40 years and only one belonged to the age group of 'below 25 years'.

4.1.2. Sex of the respondents

Sex-wise classification of the respondents is given in Table 4.2.

Table 4.2. Sex-wise classification of the respondents

Sl. No.	Sex	Number of respondents
1	Female	74
2	Male	26
Total		100

Among the respondents, 74 were females and the remaining 26 were males. The number of males was less because the survey was mainly concentrated on housewives. Only in the absence of female members or when they were reluctant to respond, the male members were surveyed.

4.1.3. Religion of the respondents

The respondents were classified on the basis of their religion and the results are presented in Table 4.3.

Table 4.3. Religion-wise classification of the respondents

Sl. No.	Religion	Number of respondents
1	Hindu	57
2	Christian	42
3	Muslim	1
Total		100

From Table 4.3 it is clear that 'Hindus' were the major group (57%) of the respondents followed by Christian (42%) and only one Muslim respondent. This is due to the location where the survey was conducted. Further in Kerala, in any survey, Hindus dominate because more than 80 per cent of the population in the state are Hindus.

4.1.4. Family size of the respondents

The family size of the respondents is presented in Table 4.4.

Table 4.4. Family size of the respondents

Sl. No.	Family size	Number of respondents
1	2	14
2	3	19
3	4	48
4	5	13
5	Above 5	6
Total		100

From Table 4.4 it is clear that majority of the respondents had a family size of four. It is observed that the percentage of respondents with a family size of four was equal in all selected divisions. The domination of family size of four is in confirmity with broad trends in Kerala state. It is also found that 19 per cent of the respondents had a family size of three members and 14 per cent of the respondents had a family size of only two and they were aged also. Respondents with a family size of more than five is 6 per cent in which two families are joint in nature.

4.1.5. Educational status of the respondents

The classification of the respondents on the basis of their educational qualifications is shown in Table 4.5.

Table 4.5. Educational level of the respondents

Sl. No.	Educational status	Number of respondents
1	Illiterate	2
2	Secondary	48
3	Graduate	39
4	Professionally qualified	10
5	Technically qualified	1
Total		100

From Table 4.5 it can be observed that the respondents who had secondary level of education constituted 48 per cent whereas 39 per cent of the respondents were graduates. 'Professionally qualified' accounted for 10 per cent of the respondents. It is also evident from the table that only one respondent was technically qualified and two were illiterate. Compared to the general trends, the per cent of professionally qualified were more.

4.1.6. Employment status of the respondents

The respondents were also classified based on their employment status which is presented in Table 4.6.

Table 4.6. Employment status of the respondents

Sl. No.	Employment status	Number of respondents
1	Employed	37
2	Retired	15
Total		52

It is observed that there were 37 employed respondents and 15 retired hands. Unemployed constituted the major group, with a share of 48 per cent because, 40 respondents fall in the age category of 'above 55' years. The more number of females in the sample had also contributed to this large unemployed group.

The employed respondents were further classified on the basis of the sector of employment and is presented in Table 4.7.

Table 4.7. Classification of employed respondents

Sl. No.	Sector	Number of respondents
1	Private	11 (30)
2	Government	12 (32)
3	Quasi-Government	1 (2.5)
4	Business	8 (22)
5	Self-employed	4 (11)
6	Agriculture	1 (2.5)
Total		37 (100)

Note: Figures in bracket indicate percentage to total

It is observed that 32 per cent of the employed respondents were 'Government servants' followed by 'private sector employees' (30%). Business people accounted for 22 per cent of the employed respondents. Self-employed people constituted 11 per cent and 2.5 per cent each were employed in Quasi-Government and agriculture sector. The survey location will definitely have an influence on all these.

4.1.7. Income level of the respondents

The respondents were classified on the basis of total annual family income and the results are shown in Table 4.8.

Table 4.8. Income level of the respondents

Sl. No.	Income group (Rs.)	Number of respondents
1	Below 60,000	1
2	60,000 - 1,00,000	23
3	1,00,000 - 1,50,000	33
4	1,50,000 - 2,00,000	25
5	2,00,000 - 3,00,000	12
6	Above 3,00,000	6
Total		100

Table 4.8 indicates that 33 per cent of the respondents belonged to the income group of 'Rs.1,00,000 – 1,50,000' and 25 per cent belonged to the income class of 'Rs.1,50,000 – 2,00,000'. There were 23 respondents in the income group of 'Rs.60,000 – 1,00,000' and 12 respondents in the income class of 'Rs.2,00,000 – 3,00,000'. It is also found that six respondents had an income 'above 3,00,000' and only one respondent was there in the income class of 'below 60,000' as his only source of income was pension. The average income of the sample was found to be above the state average (Rs.13,000), because as mentioned earlier, the sample profile includes relatively affluent areas also.

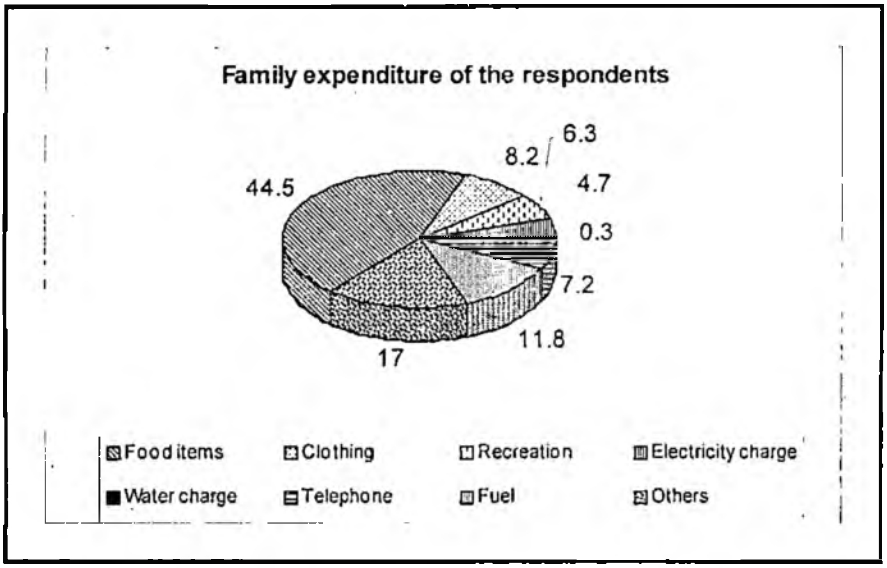
4.1.8. Family expenditure of the respondents

Average monthly family expenditure of the respondents is presented in Table 4.9 and Figure 4.1. Major items of family expenditure are food items, clothing, recreation, electricity charge, water charge, telephone charge and fuel.

Table 4.9. Family expenditure of the respondents

Sl. No.	Expenditure particulars	Average expenditure (Amount)	Average expenditure (%)
1	Food items	3520	44.5
2	Clothing	644	8.2
3	Recreation	502	6.3
4	Electricity charge	368	4.7
5	Water charge	25	0.3
6	Telephone	570	7.2
7	Fuel	936	11.8
8	Others	1335	17
Total		7900	100

Figure 4.1. Family expenditure of the respondents



From Table 4.9 it is clear that major share (44.5%) of the total family expenditure was incurred on food items. This is almost consistent with the Monthly Per Capita Consumption Expenditure (MPCE) pattern as revealed in the 60^{th} round (2004) of National Sample Survey Organisation (NSSO). Further, Table 4.9 shows that around 12 per cent of amount was spent for fuel. The expenditure for clothing, telephone, recreation and electricity were 8.2, 7.2, 6.3 and 4.7 per cent respectively. It is also found that the expenditure on water charge was very low (0.3%) because average monthly water charge was only Rs.25/-. Other expenditures include expenditure on education, medicine, rent, stationery items, payment to servants etc.

4.1.9. Regression analysis of expenditure and income

In order to determine the influence of income on expenditure the regression analysis was done. The results of regression analysis is presented in Table 4.10.

Table 4.10. Results of regression analysis

Sl. No.	Particulars	Value
1	$\propto$	0.704
2	β	0.870
3	R square	0.524
4	Standard Error ($\propto$)	0.324
5	t ($\propto$)	2.169
6	F	107.893

Table 4.10 reveals that the regression coefficient is 0.87 and the R square is significant as it is 0.524. F value is also significant with a value 107.893. These values underline a significant relation between income and expenditure.

4.1.10. Nature of purchase of agro-processed products

The role of agro-processing industry has increased in recent days and this is mainly because it deals with products which are perishable and seasonal in nature and which suit to the changing life style where the consumers look for convenience.

Table 4.11 depicts the nature of purchase of agro-processed products by the consumers.

Table 4.11. Nature of purchase of agro-processed products

Sl. No.	Nature of purchase / Products	Always	Frequently	Occasionally	Rarely	Never
1	Cereal based	26	44	18	10	2
2	Pulses based	2	12	19	40	27
3	Fruit and vegetable based	18	28	35	14	5
4	Spices and condiments based	22	34	29	12	3
5	Oil seed based	100	-	-	-	-

From Table 4.11 it can be inferred that people always tend to prefer oil based agro-processed products. In the case of pulses, it is seen that people like to have it as fresh produce rather than processed product because 27 respondents never purchased such products. Frequent purchases are made by the consumers with regard to cereals, spices and condiments. In the case of fruit and vegetable based products, majority of the respondents made occasional purchase.

4.2 Market awareness of consumers towards value added coconut products

Consumer awareness is an important ingredient in the marketing process because decision process on purchase begins with consumer awareness. This awareness creates an interest in consumers to know more and more about the products.

4.2.1. Market awareness

Table 4.12 provides a vivid picture about the awareness level of the respondents about different coconut products with its awareness indices.

Table 4.12. Market awareness level and awareness index

Sl. No.	Products \ Awareness	Completely aware	Mostly aware	Moderately aware	Slightly aware	Not aware	Awareness index
1	Coconut oil	100	-	-	-	-	100
2	Coconut milk/cream	13	43	26	7	11	60.00
3	Coconut milk powder	22	50	18	3	7	69.25
4	Coconut palm jaggery	50	16	10	3	21	67.75
5	Coconut chips	-	1	-	3	96	1.5
6	Coconut vinegar	35	11	10	2	42	48.75
7	Elaneer soda	10	8	13	5	64	23.75
8	Neera	-	2	5	1	92	4.75

9	Coconut chutney powder	49	25	13	8	5	76.25
10	Desiccated coconut	-	-	-	1	99	0.25
11	Nata-de-coco	-	-	-	-	100	0
12	Coconut ice cream	-	-	2	3	95	1.75
13	Packed tender coconut water	4	4	11	32	49	20.50
14	Snow ball tender coconut	-	1	2	1	96	2
15	Coconut toddy	40	35	19	3	3	76.5
16	Coconut burfi	35	12	9	2	42	49
17	Coconut candy	6	-	3	11	80	10.25
18	Coconut jam	-	-	-	-	100	0
19	Coconut biscuit	67	14	11	2	6	83.50
20	Coconut virgin oil	3	2	1	16	78	9
21	Elaneer sharja	-	-	1	2	97	1
22	Elaneer cool	-	-	1	1	98	0.75

Based on the awareness index, products are grouped into three viz., least aware group, moderately aware group and highly aware group, and presented in Table 4.13.

Table 4.13. Different groups of coconut products based on awareness index

Sl. No.	Group	Number of products	Name of products
1	Least aware group (<33.3)	13	Coconut chips, elaneer soda, neera, desiccated coconut, nata-de-coco, coconut ice cream, packed tender coconut water, snowball tender coconut, coconut candy, coconut jam, coconut virgin oil, elaneer sharja and elaneer cool.
2	Moderately aware group (33.3 – 66.6)	3	Coconut milk, coconut vinegar and coconut burfi.
3	Highly aware group (> 66.6)	6	Coconut oil, coconut milk powder, coconut palm jaggery, coconut chutney powder, coconut toddy and coconut biscuit.

From Tables 4.12 and 4.13, it can be observed that there are 13 products under least aware group in which nobody is aware about nata-de-coco and coconut jam. It is also found that there are only three products under moderately aware group. In the case of highly aware group, coconut oil got the maximum awareness index followed by coconut biscuit and coconut chutney powder. As coconut oil is the traditional product of Kerala, its cent per cent awareness is quiet natural. It may be inferred that the newly designed and launched products failed to attract customer attention.

4.2.2. Sources of awareness

Product awareness is considered to be a major influencing factor on the choice of the products by the consumers. Hence, an attempt is made to find out the different sources of information regarding the product. The consumers are familiarizing the products through different sources. It may be through advertisements, shopkeepers, friends and relatives, exhibitions and demonstration, reports and the like. Table 4.14 presents sources of awareness of consumers about various coconut products.

From Table 4.14 it is clear that shop keepers are the major sources of awareness about coconut milk and coconut milk powder, followed by friends and relatives. Advertisement as a source of information is found only in the case of these two products. In the case of coconut palm jaggery, major source of awareness is shop keepers followed by friends and relatives. It is observed that only four respondents are aware about the coconut chips, of this three mentioned exhibitions

Table 4.14. Sources of awareness

Sl No	Products	Advertise-ment	Shop keepers	Friends and relatives	Exhibitions and demonstration	Reports	Total
1	Coconut milk	4	68	15	2	-	89
2	Coconut milk powder	6	76	11	-	-	93
3	Coconut palm jaggery	-	26	53	-	-	79
4	Coconut chips	-	-	1	3	-	4
5	Coconut vinegar	-	48	6	4	-	58
6	Elaneer soda	-	21	13	2	-	36
7	Neera	-	-	4	-	4	8
8	Coconut chutney powder	-	62	32	1	-	95
9	Desiccated coconut	-	1	-	-	-	1
10	Nata-de-coco	-	-	-	-	-	0
11	Coconut ice cream	-	-	3	1	1	5
12	Packed tender coconut water	-	5	26	20	-	51
13	Snow ball tender coconut	-	1	-	3	-	4
14	Coconut toddy	-	-	97	-	-	97
15	Coconut burfi	-	46	11	1	-	58
16	Coconut candy	-	11	8	1	-	20
17	Coconut jam	-	-	-	-	-	0
18	Coconut biscuit	-	83	10	1	-	94
19	Coconut virgin oil	-	3	18	1	-	22
20	Elaneer sharja	-	1	-	2	-	3
21	Elaneer cool	-	-	-	2	-	2

and demonstrations as the source of awareness. In the case of coconut vinegar, elaneer soda and coconut chutney powder, it is observed that shop keepers as the major source of information followed by friends and relatives. Sources of awareness about neera is friends, relatives and various reports.

In the case of desiccated coconut, only one respondent is aware and the source of awareness is shop keepers. For packed tender coconut water, 26 respondent mentioned friends and relatives as the major source of awareness and for coconut burfi majority (46) of the respondents identified shop keepers as the source of awareness. In the case of coconut biscuit, of the total 94 aware respondents, 83 respondents mentioned shop keepers as the major source of awareness and in the case of coconut virgin oil friends and relatives are identified as the major source of awareness.

In general, shop keepers are considered as the most important source of information about the products. Friends and relatives also play a crucial role to pass information regarding the products. Further, we can infer that the role of advertisement is negligible in creating the awareness. It is especially because of the lack of advertisement efforts by the producers.

4.2.3. Frequency of purchase

Consumers make their purchases at varying intervals like weekly, fortnightly and monthly. Table 4.15 shows the frequency of purchase of the selected coconut products by the consumers.

Table 4.15. Frequency of purchase of the coconut products

Sl. No.	Products	Weekly	Fortnightly	Monthly	No specific time period	Total
1	Coconut oil	6(6)	8(8)	67(68)	18(18)	99 (100)
2	Coconut milk	-	-	-	2(100)	2(100)
3	Coconut milk powder	-	-	2(20)	8(80)	10(100)
4	Coconut palm jaggery	-	-	-	21(100)	21(100)
5	Coconut vinegar	-	-	-	31(100)	31(100)
6	Elaneer soda	-	-	-	4(100)	4(100)

Note: Figures in bracket indicate percentage to total

It is observed that around 68 per cent of the coconut oil users purchased their requirement on a monthly basis and there is no specific time period for 18 per cent of the respondents. There is no specific timing for the purchase of coconut milk, coconut palm jaggery, coconut vinegar and elaneer soda. In the case of coconut milk powder there is no specific timing for 80 per cent of the respondents and the remaining respondents purchase it on a monthly basis. Nobody is purchasing coconut chips and neera as they are not available in the market. Actually, the frequency of purchase is associated to the purchase traditions followed in Kerala long back. Provisions are purchased on a monthly basis. But today because of the breakdown of joint family and also because of the employment of husband and wife, the purchase patterns are changing and become casual. These factors are having some influence on purchase behaviour today. The purchase behaviour is also associated to family size.

4.2.4. Quantity of purchase

Table 4.16 depicts a clear picture of the average quantity consumed or used by the households.

Table 4.16. Quantity of purchase of coconut products per month

Sl. No.	Products	Number of consumers	Total quantity	Average quantity
1	Coconut oil	99	266 kg	2.7 kg
2	Coconut milk	2	800 ml	400 ml
3	Coconut milk powder	10	5 kg	0.5 kg
4	Coconut palm jaggery	21	17 kg	0.8 kg
5	Coconut vinegar	31	3700 ml	120 ml
6	Elaneer soda	4	2800 ml	700 ml

It can be inferred from Table 4.16 that on an average 2.7 kg coconut oil is consumed by households. The average consumption per month of coconut milk and coconut milk powder is 400 ml and 500 g respectively. On an average households require 120 ml coconut vinegar. With regard to coconut palm jaggery and elaneer soda average quantity of consumption is 0.8 kg and 800 ml respectively. When we discuss the quantity of purchase, a clear picture will be obtained only if we associate it with food habits and family size. Even religion plays an important role in this regard.

In the case of coconut milk and coconut milk powder, quantity consumed is very low in volume because majority of the respondents felt that packaged food is not as good as home made and they are not ready to experiment new packaged products. It is also seen that quantity of purchase of coconut vinegar and elaneer soda is small. By nature, these products have only limited use. With respect to elaneer soda, it is associated with impulse purchase whereas the use of coconut vinegar is limited to preservation purpose and as a flavouring agent to some extent. So the small quantity of purchase is quite natural.

4.2.5. Reasons for non-purchase of coconut products

The respondents are not purchasing many coconut products. Table 4.17 presents reasons for non-purchase of the products.

Table 4.17. Reasons for non-purchase of coconut products

Sl. No.	Products	Unaware	Non-availability	Not economical in use	Health reason	Not necessary	Total
1	Coconut oil	-	-	-	1	-	1
2	Coconut milk	11	1	38	12	36	98
3	Coconut milk powder	7	1	37	11	34	90
4	Coconut palm jaggery	21	3	-	-	55	79
5	Coconut chips	96	4	-	-	-	100
6	Coconut vinegar	42	13	-	2	12	69
7	Elaneer soda	64	5	-	-	27	96
8	Neera	92	2	-	-	6	100

From Table 4.17, it is found that one respondent is not purchasing coconut oil due to health reasons. In the case of coconut milk and coconut milk powder majority of the respondents opined that it is not economical in use. Other reasons for non-purchase of these items include health reasons and the product is not essential, because majority of the respondents felt that packaged food is not as good as home made. In the case of coconut palm jaggery, 55 respondents pointed out that the product is not necessary and three pointed out that the product is not available.

Only four respondents were aware about coconut chips and they pointed out that the product is not available in the market. With regard to coconut vinegar, 13 respondents opined that the product is not available and 12 respondents suggested that the product is not necessary to them. In the case of elaneer soda, 27 respondents pointed out 'not necessary' as the reason and 5 respondents told that the product is not available. Of the total aware respondents of neera, six pointed out that the product is not necessary to them, the other reason mentioned is non-availability. These trends reveal a strong need of creating customer awareness among the people through appropriate promotional mix.

4.2.6. Brand awareness

Branding is an important marketing tool. A good brand speeds up shopping for customers and makes it convenient to repeat purchases. The socio-economic and cultural changes that took place in the state paved the way for the high acceptance of branded products. The family structure in urban areas changed from joint to nuclear. The education and employment level of women increased considerably. The general awareness level of consumers, particularly women, is also very high due to high media exposure. As they are well educated and well informed, they are not ready to make any compromise with regard to the health and insisted on quality products for consumption. As brand assures uniform quality, provides a frame of reference and for exercising rights of the consumers, consumers preference towards branded products increased considerably.

Brand awareness is an important parameter to assess their choice behaviour. For all the selected coconut products except neera, different brands are available in the market. Table 4.18 provides a clear picture of brand awareness level of the respondents.

Table 4.18. Brand awareness level of consumers

Sl. No.	Products	Number of respondents	
		Aware	Unaware
1	Coconut oil	82	18
2	Coconut milk powder	12	88

From Table 4.18 it is clear that awareness about brands was more in the case of coconut oil ie. 82 per cent. Only 12 per cent of the respondents is aware about the brands of coconut milk powder. Nobody is aware about the brands of coconut milk, coconut palm jaggery, coconut vinegar and coconut chips.

4.2.7. Brands recalled by the respondents

The coconut oil brands recalled by the respondents are presented in Table 4.19.

Table 4.19. Brands recalled by the respondents (n = 82)

Sl. No.	Brands	Number of respondents
1	Kera	80
2	KPL-Sudhi	65
3	Parachute	21
4	KLF-Nirmal	14
5	Onam	1
6	Sabari	1
7	VVD	1

It is evident from Table 4.19 that Kera was the most popular brand (80%) among the respondents. As the meaning of Kera is associated with coconut, the customers are able to recall the brand easily. KPL-Sudhi was the next major brand known by majority (65%) of the respondents followed by Parachute with 21 per cent and KLF-Nirmal with 14 per cent. In the case of KPL-Sudhi, advertisement plays an important role in brand recall in the opinion of respondents. The other brands recalled by the respondents include Onam, Sabari and VVD because one respondent each were using these brands.

In the case of coconut milk powder, the only brand which is recalled by the respondents is Maggi. Among the total respondents, 12 respondents were aware about this brand.

4.2.8. Sources of brand awareness

Table 4.20 gives the data regarding the sources of information about the brands of coconut products.

Table 4.20. Sources of brand awareness

Sl. No.	Products	Advertisement	Shop Keepers	Friends and Relatives	Total
1	Coconut oil	56 (68)	23 (28)	3 (4)	82 (100)
2	Coconut milk powder	2 (17)	9 (75)	1 (8)	12 (100)

Note: Figures in bracket indicate percentage to total

In the case of coconut oil, advertisement (68%) is the major source of information followed by shop keepers. But in the case of coconut milk powder, shop keeper is the major source of information. So we may infer that the role of advertisement is only marginal in creating awareness for coconut milk powder. It is mainly because of lack of advertisement efforts by producers.

4.2.9. Brand preference

Brand preferences of the consumers towards selected coconut products and the reasons for their preference are depicted in Table 4.21.

Table 4.21. Reasons for brand preference.

Sl. No.	Reasons / Preferred brand	Quality	Easy Availa-bility	Reasonable price	Shopkeepers influence	Number of respondents
I	***Coconut oil***					
1	Kera	7	3	3	1	14
2	KPL-Sudhi	3	2	3	1	11
3	Parachute	2	-	-	-	2
II	***Coconut milk powder***					
1	Maggi	4	6	-	-	10

From Table 4.21 it can be inferred that Kera (14) is the most preferred brand of coconut oil followed by KPL-Sudhi (11). Parachute is comparatively low preferred brand and is mainly used as hair oil. For the coconut milk powder, Maggi is the only brand known to the consumers and hence preferred by them.

The reasons for brand preferences of consumers towards selected coconut products were also identified. Among them, quality was identified as the most important reason for brand preference of coconut oil and is followed by reasonable price and easy availability of the brand. It is also noticed that shopkeepers have some influence on the purchase decision of consumers. In the case of coconut milk powder easy availability of the brand is the important reason for brand preference. Quality was identified as the second reason for the brand preference.

4.2.10. Decision maker

Table 4.22 gives an idea about the decision maker in the family regarding the purchase of coconut products.

Table 4.22. Decision maker

Sl. No.	Decision maker / Products	Husband alone	Wife alone	Husband or Wife	Total
1	Coconut oil	10 (10)	67 (68)	22 (22)	99 (100)
2	Coconut milk	-	1 (50)	1 (50)	2 (100)
3	Coconut milk powder	-	6 (60)	4 (40)	10 (100)
4.	Coconut palm jaggery	3 (14)	11 (53)	7 (33)	21 (100)
5	Coconut vinegar	-	26 (84)	5 (16)	31 (100)
6	Elaneer soda	3 (75)	-	1 (25)	4 (100)

Note: Figures in bracket indicate percentage to total

Eventhough decision maker is an important term in marketing theories, in the present study, its relevance is only marginal. However, it is evident from Table 4.22 that in majority of the households, the decision regarding the purchase of coconut products except elaneer soda was made by housewives independently. Husband is playing only a minor role with regard to the decision making in the purchase of coconut products except elaneer soda.

4.2.11. Actual buyer

Table 4.23 gives information regarding the persons who actually make the purchase.

Table 4.23. Actual buyer

Sl. No.	Actual buyer / Products	Husband alone	Wife alone	Husband or Wife	Total
1	Coconut oil	49 (50)	19 (19)	31 (31)	99 (100)
2	Coconut milk	-	1 (50)	1 (50)	2 (100)
3	Coconut milk powder	4 (40)	2 (20)	4 (40)	10 (100)
4	Coconut palm jaggery	8 (38)	6 (29)	7 (33)	21 (100)
5	Coconut vinegar	13 (42)	6 (19)	12 (39)	31 (100)
6	Elaneer soda	3 (75)	-	1 (25)	4 (100)

Note: Figures in bracket indicate percentage to total

From Table 4.23 it is clear that the purchase of coconut oil was actually made independently by husbands in 50 per cent and wives in 19 per cent of the households. In the case of coconut milk powder the share was 40 per cent and 20 per cent respectively. The purchase by husband or wife was made in 31 per cent of the households in the case of coconut oil and 40 per cent in the case of coconut milk powder. In the case of coconut palm jaggery and coconut vinegar, husband is the actual buyer in 38 per cent and 42 per cent of the households respectively closely followed by the purchases made by either husband or wife. From this, it can be deduced that husband is the actual buyer in majority of the households. Further, it is observed that coconut based products are purchased along with routine purchases.

4.2.12. Uses of the coconut products

Table 4.24 presents the different uses of coconut products.

Table 4.24. Uses of coconut products

Sl. No.	Products	Edible purpose	Culinary purpose	Preser-vation	Flavour-ing	Refresh-ment	Medi-cinal use	Hair oil & body oil	Number of respondents
1	Coconut oil	-	97	-	-	-	-	99	99
2	Coconut milk	-	2	-	-	-	-	-	2
3	Coconut milk powder	-	10	-	-	-	-	-	10
4	Coconut palm jaggery	16	-	-	-	-	5	-	21
5	Coconut vinegar	-	-	28	3	-	-	-	31
6	Elaneer soda	-	-	-	-	4	-	-	4

Coconut oil is mainly used for culinary purpose and also as hair oil or body oil or both. It is revealed that coconut oil is used for culinary purpose by 97 per cent respondents and as hair oil or/and body oil by 99 per cent of respondents. In addition to this, the product is also used for religious purposes. Coconut milk and milk powder is mainly used for culinary purpose. Besides, these products are also used as flavouring agents. In the case of coconut palm jaggery 16 per cent of the respondents pointed out that the product is used for edible purpose and 5 per cent mentioned the medicinal purpose. Further, 28 per cent of the respondents recorded that coconut vinegar is used as preservative and 3 per cent mentioned it as a flavouring agent. In the case of elaneer soda, it is used for refreshment purpose.

4.2.13. Length of use

Table 4.25 shows how long the current brands of coconut oil and coconut milk powder have been in use.

Table 4.25. Length of use of current brand

Sl. No.	Duration / Brand	< 1 month	1 – 2 months	2 – 6 months	6 – 12 months	1 – 2 years	> 2 years	Total
I	***Coconut oil***							
1	Kera	1	1	2	2	1	7	14
2	KPL-Sudhi	-	-	3	-	2	5	10
3	Parachute	-	-	1	1	-	-	2
4	Onam	-	1	-	-	-	-	1
II	***Coconut milk powder***							
1	Maggi	-	-	-	4	3	-	7

It is evident from Table 4.25 that 'Kera' was the main brand of coconut oil used by the consumers followed by KPL-Sudhi. The other brands which are currently used include Parachute and Onam. It is found that 12 respondents had been using the same brand of coconut oil for more than two years. It can be seen further that majority of the brand users had been using the same brand for more than one year. Thus brand loyalty was found to be very high among the respondents.

In the case of coconut milk powder, 100 per cent of the brand users were using the same brand for more than 6 months. It may be due to lack of awareness about the other available brands.

4.3 Factors influencing the purchase decision of selected coconut products

This part identifies the factors that influence the purchase decision of coconut products. The factors influencing the purchase of each item were identified after a pilot study and the analysis was done with the help of ranking. The results are presented in the following sections.

4.3.1. Factors influencing the purchase decision of coconut oil

Table 4.26 represents the various factors influencing the purchase decision of coconut oil and its comparative extent of influence. The factors influencing the purchase decision of coconut oil are quality, easy availability, reasonable price, influence of advertisement, health factors and influence of others.

Table 4.26. Factors influencing the purchase decision of coconut oil

Sl. No.	Factors	Sum of ranks	Rank
1	Quality	156	1
2	Health factors	304	2
3	Easy availability	315	3
4	Reasonable price	319	4
5	Influence of others	430	5
6	Influence of advertisement	555	6

In the case of coconut oil customers ranked 'quality' as the major factor that influenced their buying decision. 'Health factors' was ranked second followed by easy availability. Fourth and fifth ranks were assigned to reasonable price and influence of others. Influence of advertisement has got only the sixth rank. As the coconut oil is traditionally used product in Kerala, the advertisement can only play limited role in this regard.

4.3.2. Factors influencing the purchase decision of coconut milk

There are only two consumers of coconut milk. The selected factors that may influence the purchase decision of coconut milk include convenient to use, quality, easy availability, reasonable price, influence of advertisement, convenience in storing and influence of others. Among the two responses, convenient to use was identified as the major factor influencing the purchase decision followed by quality and easy availability. 'Influence of others' was ranked as the fourth factor which influence the buying decision. Other factors had only an insignificant role in their purchase decision.

4.3.3 Factors influencing the purchase decision of coconut milk powder

Factors influencing the purchase decision of coconut milk powder are presented in Table 4.27. The factors given for ranking included convenient to use, quality, easy availability, reasonable price, influence of advertisement, convenience in storing and influence of others. The customers ranked all the factors in the order of importance and the sum of ranks obtained by each factor is presented in Table 4.27.

Table 4.27. Factors influencing the purchase decision of coconut milk powder

Sl. No.	Factors	Sum of ranks	Rank
1	Convenient to use	10	1
2	Influence of others	35	2
3	Easy availability	41	3
4	Quality	42	4
5	Reasonable price	48	5
6	Convenience in storing	48	5
7	Influence of advertisement	56	6

It is evident from Table 4.27 that 'convenient to use' was ranked as the major factor influencing the purchase decision of the coconut milk powder users followed by influence of others and easy availability. Quality was ranked as the fourth factor and reasonable price and convenience in storing as the remaining factors. In the case of coconut milk powder also, influence of advertisement obtained only an insignificant position in the order of importance.

4.3.4. Factors influencing the purchase decision of coconut palm jaggery

Table 4.28 pictures the various factors influencing the purchase decision of coconut palm jaggery. The respondents were asked to rank the factors that may influence the purchase decision namely quality, easy availability, reasonable price, health factors and influence of others according to the order of preference.

Table 4.28. Factors influencing the purchase decision of coconut palm jaggery

Sl. No.	Factors	Sum of ranks	Rank
1	Health factors	26	1
2	Quality	53	2
3	Influence of others	54	3
4	Reasonable price	77	4
5	Easy availability	105	5

From Table 4.28, it is evident that health factor was ranked as the major factor influencing the purchase decision followed by quality and influence of others. Reasonable price and easy availability obtained fourth and fifth positions respectively.

4.3.5. Factors influencing the purchase decision of coconut vinegar

Table 4.29 depicts various factors influencing the purchase decision of coconut vinegar. The factors in the purchase decision of coconut vinegar included quality, easy availability, reasonable price, health factors and influence of others.

Table 4.29. Factors influencing the purchase decision of coconut vinegar

Sl. No.	Factors	Sum of ranks	Rank
1	Quality	74	1
2	Health factors	78	2
3	Influence of others	80	3
4	Reasonable price	97	4
5	Easy availability	136	5

The users of coconut vinegar ranked 'quality' as the major factor that influences the buying decision. Health factors was ranked second followed by influence of others. Reasonable price and easy availability obtained fourth and fifth positions respectively.

4.3.6. Factors influencing the purchase decision of elaneer soda

The number of consumers of elaneer soda is only four. Factors that may influence the purchase decision of consumers were given to respondents for ranking, which include quality, reasonable price, health factors and influence of others. Among the factors, quality was identified as the major factor followed by health factors. The remaining factors such as influence of others and reasonable price were found comparatively less significant.

A summary picture of factors influencing the purchase decision of selected coconut products is given in Table 4.30.

4.4 Consumers perception towards selected coconut products

Perception can be described as "how we see the world around us". It helps to explain the phenomenon of why different individuals respond differently to the same stimulus under the same condition. Each product provides certain stimulus to consumers through the physical shape, colour, size, fragrance, feel, taste, its package, advertisements and commercials. Here an attempt is made to understand why and what different types of perceptions are associated with each of the stimuli so that it can be possible to highlight that particular stimulus which evokes the most favourable perception in the maximum number of consumers.

For the purpose perception index has been calculated and presented in Table 4.31.

Table 4.30. Factors influencing the purchase decision of selected coconut products

Sl. No.	Products	Factor 1	Factor 2	Factor 3	Factor 4
1	Coconut oil	Quality	Health factors	Easy availability	Reasonable price
2	Coconut milk	Convenient to use	Quality	Easy availability	Influence of others
3	Coconut milk powder	Convenient to use	Influence of others	Easy availability	Quality
4	Coconut palm jaggery	Health factors	Quality	Influence of others	Reasonable price
5	Coconut vinegar	Quality	Health factors	Influence of others	Reasonable price
6	Elaneer soda	Quality	Health factors	Influence of others	Reasonable price

Table 4.31. Perception index

Sl. No.	Statements	Coconut oil	Coconut milk	Coconut milk powder	Coconut palm jaggery	Coconut chips	Coconut vinegar	Elaneer soda	Neera
1	People are well aware of the product	100	41.5	45	45.5	-92	0	-50.5	-88
2	People are ready to use the products if they are given information about it	96.5	-50	-55.5	44.5	14.5	33.5	-65	-88.5
3	The price of the product is reasonable	15	-43.5	-46	28	0	17	11	0
4	The quality of the product is acceptable	73.5	-41.5	-35.5	38.5	1.5	22	16.5	0
5	The product has attractive packing	59.5	41	52.5	-29	0.5	9.5	1.5	0
6	The product is readily available	93	22	56.5	-5	-31	5.5	-3.5	-15
7	The product has adequate freshness	59	-15.5	-31	-0.5	1	20	14	0
8	The product has necessary nutritional value	61	-26.5	-23	56.5	0.5	18.5	4.5	0
9	The product is available in convenient packing and size	64	21	46.5	-34.5	-17	-5	-0.5	-11.5
10	The product is convenient for use	76	81.5	87	38.5	1	26	15	0
11	The product has pleasant colour	63	48.5	45	28.5	1	25.5	13.5	0
12	The product has good taste	83	-26	-25	42	1	18	18	0
13	The product has pleasant odour	80	32.5	33	12.5	1.5	19.5	11	0
14	The product is sufficiently pure and free from foreign material	11	-27	-24	3.5	1.5	19.5	11	0
15	The product is hygienic	51	35	42	1.5	1.5	19.5	8	0
16	The product has effective promotion	35.5	-72	-52.5	-68	-14	-43	-27.5	-11.5
17	The product has long shelf life	-1	-39.5	26	-25.5	0.5	2	-7	0
18	The product is economical in use	-3	-60.5	-59.5	24	0	7.5	6.5	0
19	The product has good demand in the market	87.5	-57	-47	-25.5	-14	-3.5	-8	-13
20	People are intend to buy the product within the next six months	95.5	-67.5	-61.5	-45	3.5	29	-62.5	-86

In order to get more a clear picture about the perception of consumers both product and attribute-wise analysis was made.

4.4.1. Product wise perception of consumers

The results of product wise analysis of consumers perception are discussed below.

4.4.1.1. Consumers perception about coconut oil

Table 4.32 shows perception indices of various attributes of coconut oil.

Table 4.32. Perception indices of various attributes of coconut oil

Attributes	Perception index
Intention to buy	95.5
Ready availability	93
Taste	83
Pleasant odour	80
Acceptable quality	73.5
Effective promotion	35.5
Reasonable price	15
Long shelf life	-1

From the very high indices of taste, pleasant odour and acceptable quality, it can be deduced that consumers perception about coconut oil is good. Because of this reason they have the intention to buy. It is revealed that 'long shelf life' got a negative index and it is the clear indication of low shelf life of coconut oil compared to other edible oil. With respect to price majority of the respondents opined that price is not reasonable.

4.4.1.2. Consumers perception about coconut milk

Table 4.33 depicts the perception indices of various attributes of coconut milk.

Table 4.33. Perception indices of various attributes of coconut milk

Attributes	Perception index
Convenience in use	81.5
Attractive packing	41
Pleasant odour	32.5
Ready availability	22
Adequate freshness	-15.5
Taste	-26
Long shelf life	-39.5
Acceptable quality	-41.5
Reasonable price	-43.5
Intention to buy	-67.5
Effective promotion	-72

From Table 4.33 it can be deduced that majority of the respondents perceived that coconut milk is convenient to use. In terms of attractive packing and pleasant odour majority of the aware respondents feels that the product is good. But the consumers perceived that coconut milk is poor in terms of freshness, taste, shelf life, quality and price. So there is no intention to buy the product by majority of the respondents. Lack of effective promotion is an added drawback of coconut milk.

4.4.1.3. Consumers perception about coconut milk powder

Perception indices of various attributes of coconut milk powder is presented in Table 4.34.

Table 4.34. Perception indices of various attributes of coconut milk powder

Attributes	Perception index
Convenience in use	87
Ready availability	56.5
Attractive packing	52.5
Pleasant odour	33
Long shelf life	26
Taste	-25
Adequate freshness	-31
Acceptable quality	-35.5
Reasonable price	-46
Effective promotion	-52.5
Intention to buy	-61.5

Similar to coconut milk, coconut milk powder is also convenient to use. From the very poor indices of quality, freshness, taste and price it can be deduced that the product is not upto the expectations of the consumers. Because of this reason there is no intention to buy even though the product is readily available in the market. In addition to this, consumers perceived that the promotion strategies of coconut milk powder is not effective.

4.4.1.4. Consumers perception about coconut palm jaggery

Table 4.35 presents perception indices of various attributes of coconut palm jaggery.

Table 4.35. Perception indices of various attributes of coconut palm jaggery

Attributes	Perception index
Nutritional value	56.5
Taste	42
Acceptable quality	38.5
Reasonable price	28
Hygiene	1.5
Ready availability	-5
Attractive packing	-29
Intention to buy	-45
Effective promotion	-68

From Table 4.35, it can be seen that nutritional value got highest score of 56.5, from which it can be inferred that majority of the consumers are aware about the nutritional value and medicinal properties of coconut palm jaggery and they perceived it as a nutritional product. In terms of taste and quality, it got the indices of 42 and 38.5 respectively. With respect to packing and availability it shows poor indices, because coconut palm jaggery is not available in all shops and it is mainly available in Ayurvedic stores. Majority of the respondents opined that either there is no packing or poor packing for coconut palm jaggery. This fact also might have contributed for the poor index of hygiene.

4.4.1.5. Consumers perception about coconut chips

Table 4.36 depicts perception indices of various attributes of coconut chips.

Table 4.36. Perception indices of various attributes of coconut chips

Attributes	Perception index
Intention to buy	3.5
Pleasant odour	1.5
Taste	1
Reasonable price	0
Effective promotion	-14
Ready availability	-31

From Table 4.36, it can be seen that all the attributes got poor indices. It may be due to lack of awareness and non availability of the product in the market. The survey revealed that only one respondent tasted the coconut chips and she has favourable opinion towards taste and odour, so that it got positive index. No one is aware about the price of the coconut chips and hence the index is zero.

From this it can be inferred that the product may be made available in the market and more promotional efforts are necessary from the part of the units so as to create awareness among the consumers.

4.4.1.6. Consumers perception about coconut vinegar

Table 4.37 pictures the perception indices of various attributes of coconut vinegar.

Table 4.37. Perception indices of various attributes of coconut vinegar

Attributes	Perception index
Intention to buy	29
Acceptable quality	22
Pleasant odour	19.5
Taste	18
Reasonable price	17
Ready availability	5.5
Long shelf life	2
Effective promotion	-43

Though the indices of quality, odour and taste are low it can not be deduced that the performance of the product is poor. Many of the respondents are unaware or ignorant about the attributes of the product and that is why the indices tend to be low. Many of the respondents disagreed with the statement that the product has long shelf life. According to them shelf life of coconut vinegar is low compared to synthetic vinegar. With respect to availability it got an index of only 5.5, because the product is not available in all shops regularly. Thus it may be made available in the shops. Further, the consumers perceived that promotional measures of coconut vinegar is very poor.

4.4.1.7. Consumers perception about elaneer soda

Perception indices of various attributes of elaneer soda is presented in Table 4.38.

Table 4.38. Perception indices of various attributes of elaneer soda

Attributes	Perception index
Taste	18
Acceptable quality	16.5
Adequate freshness	14
Reasonable price	11
Pleasant odour	11
Necessary nutritional value	4.5
Attractive packing	1.5
Ready availability	-3.5
Effective promotion	-27.5
Intention to buy	-62.5

Since the number of users of elaneer soda is very low majority of the respondents have no opinion about the product and it creates problems to get a clear picture about their perception. Majority of the users and respondents who are aware about the product have favourable opinion about the quality, freshness and taste of the elaneer soda. From the very poor index, it can be deduced that consumers perceived that there is no effective promotion for elaneer soda. The index of 'intention to buy' is also very poor. It may be due to the fact that survey was mainly concentrated on house wives. As far as the product is concerned it is mostly subjected to impulsive purchase.

4.4.1.8. Consumers perception about neera

Perception indices of various attributes of neera is presented in Table 4.39.

Table 4.39. Perception indices of various attributes of neera

Attributes	Perception Index
Intention to buy	-8.6
Effective promotion	-11.5
Demand	-13
Ready availability	-15

As neera is new product in the market, most of the respondents are unaware of it. From Table 4.39 it is evident that the product is not readily available in the market. With respect to demand and intention to buy, the indices are even negative (-13) and (-15) respectively, because the consumers have a general feeling that neera is some what near to coconut toddy. Thus, it is essential to change this feeling and to create awareness among people about the product. Other wise, there may not be very large demand for the product.

4.4.2. Attribute-wise perception of consumers

In order to get more clear picture about the perception of consumers, their attribute-wise perception was found out which are discussed below:

4.4.2.1. Perception on awareness

Table 4.40 presents consumers perception about the awareness of coconut products.

Table 4.40. Perception on awareness

Sl. No.	Perception level	Number of products	Name of products
1	Least aware	4	Coconut chips, coconut vinegar, elaneer soda and neera
2	Moderately aware	3	Coconut milk, coconut milk powder and coconut palm jaggery
3	Mostly aware	1	Coconut oil

Consumers vary greatly in their knowledge about an offering. From Table 4.40, it is clear that consumers' awareness level is high with respect to coconut oil and is less with respect to coconut chips, coconut vinegar, elaneer soda and neera.

4.4.2.2. Perception on willingness to use

Table 4.41 depicts how the consumers perceive about their willingness to use the coconut products.

Table 4.41. Perception on willingness to use

Sl. No.	Perception level	Number of products	Name of products
1	Lesser willingness	5	Coconut milk, coconut milk powder, coconut chips, elaneer soda and neera.
2	Moderate willingness	2	Coconut palm jaggery and coconut vinegar
3	More willingness	1	Coconut oil

From Table 4.41 it is evident that, with regard to coconut milk, coconut milk powder, coconut chips, elaneer soda and neera consumers are not ready to use the products even if they are given information about it. In the case of coconut oil consumers have more willingness to use and with respect to coconut palm jaggery and coconut vinegar, they have only moderate willingness.

4.4.2.3. Perception on price

How a consumer perceives price has a strong influence on both purchase intentions and purchase satisfaction. It is observed that consumers perceived that price is not reasonable with respect to all selected coconut products. Perception of price unfairness affect consumers' perception of product value, and ultimately their willingness to purchase the product.

4.4.2.4. Perception on quality

Consumers often judge the quality of a product on the basis of a variety of information cues that they associate with the product. Table 4.42 pictures consumers' perception on quality with respect to the selected coconut products.

Table 4.42. Perception on quality

Sl. No.	Perception level	Number of products	Name of products
1	Low quality	6	Coconut milk, coconut milk powder, coconut chips, coconut vinegar, elaneer soda and neera.
2	Moderate quality	1	Coconut palm jaggery
3	High quality	1	Coconut oil

From Table 4.42 it is clear that consumers perception on quality with respect to coconut oil is high and moderate with respect to coconut palm jaggery. They perceived that all the other selected products are with lesser quality.

4.4.2.5. Perception on packing

Consumers perception on packing is shown in Table 4.43.

Table 4.43. Perception on packing

Sl. No.	Perception level	Number of products	Name of products
1	Least favourable packing	5	Coconut palm jaggery, coconut chips, coconut vinegar, elaneer soda and neera.
2	Moderately favourable packing	3	Coconut oil, coconut milk, coconut milk powder.

It can be seen that consumers perceived that packing with respect to coconut oil, coconut milk and coconut milk powder is moderately good and the remaining are with bad packing. It is to be noted that no product is perceived to be with very good packing. So this is essentially an area for improvement.

4.4.2.6. Perception on availability

Table 4.44 depicts consumers perception on availability of coconut products.

Table 4.44. Perception on availability

Sl. No.	Perception level	Number of products	Name of products
1	Poor availability	6	Coconut milk, coconut palm jaggery, coconut chips, coconut vinegar, elaneer soda and neera
2	Moderate availability	1	Coconut milk powder
3	Ready availability	1	Coconut oil

It is evident from Table 4.44 that consumers perceived coconut oil as the only readily available product whereas coconut milk powder is moderately available. All the other selected products are very poor in their availability. .

4.4.2:7. Perception on freshness

Consumers perceived that freshness of coconut oil is most favourable and remaining comes under the category of least favourable.

4.4.2.8. Perception on nutritional value

Consumers perceived that nutritional value is moderately favourable with respect to coconut oil and coconut palm jaggery and least favourable in the case of all other selected products.

4.4.2.9. Perception on convenient packing and size

In the case of coconut oil and coconut milk powder, consumers perceived that the availability in convenient packing and size is moderately favourable. All other products come under the category of least favourable.

4.4.2.10. Perception on convenience in use

Table 4.45. shows consumers' perception on convenience in use of coconut products.

Table 4.45. Perception on convenience in use

Sl. No.	Perception level	Number of products	Name of products
1	Least convenient	4	Coconut chips, coconut vinegar, elaneer soda and neera
2	Moderately convenient	1	Coconut palm jaggery
3	Highly convenient	3	Coconut oil, coconut milk, coconut milk powder

It can be seen that consumers perceived that coconut oil, coconut milk and coconut milk powder are highly convenient to use while coconut palm jaggery is moderately convenient to use.

4.4.2.11. Perception on colour

Colour in an extremely important factor in perception of visual stimuli. Here the consumers perceived that colour is moderately favourable in the case of coconut oil, coconut milk and coconut milk powder and for all other products it is least favourable.

4.4.2.12. Perception on taste

Taste is often individualistic – what taste is good to one person may not be tasty for another. The consumers perception on taste with respect to coconut products is shown in Table 4.46.

Table 4.46. Perception on taste

Sl. No.	Perception level	Number of products	Name of products
1	Least favourable taste	6	Coconut milk, coconut palm jaggery, coconut chips, coconut vinegar, elaneer soda and neera.
2	Moderately favourable taste	1	Coconut milk powder
3	Most favourable taste	1	Coconut oil

It is evident that consumers perceived that tastes of coconut milk powder and coconut oil are moderately favourable and most favourable respectively. All other products come under the category of least favourable.

4.4.2.13. Perception on odour

Consumers perceived that odour of coconut oil is highly favourable and that of all other products fall on the least favourable category.

4.4.2.14. Perception on purity

Consumers perceived that purity is less for all the coconut products.

4.4.2.15. Perception on hygiene

In terms of hygiene, consumers perceived that it is moderately favourable with respect to coconut oil, coconut milk and coconut milk powder. For all other products it is least favourable.

4.4.2.16. Perception on promotion

Consumers perceived that promotional efforts are moderate in the case of coconut oil, and for all other products it is the least.

4.4.2.17. Perception on shelf life and economy

The shelf life and economy of all the selected coconut products are less as per the perception of the respondents.

4.4.2.18. Perception on demand and intention to buy

Consumers perceived that there is no strong demand and intention to buy the coconut products except coconut oil.

4.5 Market potential of selected value added coconut products

To develop effective targeting strategies and to manage marketing efforts effectively, it is essential to analyse the market potential. Market potential is the upper limit of the market demand. Here an attempt is made to analyse various dimensions of market potential of the selected coconut products. Therefore, it may help the producers and dealers to develop and expand their market and this will inturn help the survival of the farmers and coconut industry.

4.5.1. Potential level index

Potential level index checks whether there is demand for coconut products. Potential level indices of the selected coconut products are presented in Table 4.47.

Table 4.47. Potential level index

Sl. No.	Products	Potential level index
1	Coconut oil	98.4
2	Coconut milk	8.6
3	Coconut milk powder	13.6
4	Coconut palm jaggery	15.6
5	Coconut chips	44.2
6	Coconut vinegar	60.8
7	Elaneer soda	6.8
8	Neera	0.4

It is observed from Table 4.47 that coconut oil has the highest market potential. It is natural because coconut oil is a traditionally used product in Kerala. But the potential level index of coconut milk and coconut milk powder is comparatively very low. Since the coconut is readily available either in the home itself or in the nearby shop, majority of the respondents do not prefer to purchase coconut milk and coconut milk powder, but they prefer to have these items as home made. Hence, the possibility to increase market potential exists only when the quality can be increased upto the expectations of the consumers. In the case of coconut chips and coconut vinegar, potential level indices are 44.2 and 60.8 respectively. While looking into the nature of these products it implies high market potential. Eventhough these products, particularly coconut chips are not readily available in the market, respondents are ready to purchase if it is made available. It is also observed that there is only less potential for elaneer soda and neera. These products are mostly subjected to impulsive purchase. In addition to this, lack of awareness and non-availability of the products in the markets also contribute to this low potential.

4.5.2. Potential to awareness index

In order to get a more clear picture about market potential it is necessary to make comparison with awareness level of the consumers. For the purpose, potential to awareness index of each selected product has been calculated and presented in Table 4.48.

Table 4.48. Potential to awareness index

Sl. No.	Products	Potential to awareness index
1	Coconut oil	98.4
2	Coconut milk	14.3
3	Coconut milk powder	19.6
4	Coconut palm jaggery	23.0
5	Coconut chips	2946.7
6	Coconut vinegar	124.7
7	Elaneer soda	28.6
8	Neera	8.42

Table 4.48 reveals that potential to awareness index of coconut oil is the same as potential level index, because coconut oil is a traditionally used product in Kerala and got the awareness index of 100. In the case of coconut milk and coconut milk powder, potential to awareness index is 14.3 and 19.6 respectively. So the chances to increase the market potential by creating awareness is limited. Potential to awareness index of coconut chips and coconut vinegar is found to be very high. From this, it can be deduced that both coconut chips 'and coconut vinegar have high market potential and it can be increased if it is possible to increase the awareness level. Respondents are ready to purchase coconut chips even if they are unaware about the product. This may be due to Keralites' preference to have different types of chips. Eventhough promotional measures towards products like vinegar is not influential in our state, inorder to create awareness among the people and to make shift from synthetic vinegar to coconut vinegar or to make the non-user to user, more promotional efforts are necessary.

The potential to awareness index of neera is very low. Because both awareness level and potential level index for the neera is low. The aware respondents have a general feeling that neera is some what near to coconut toddy. Thus, it is essential to change this feeling and to create awareness among the people about this product, so as to increase demand for the product.

4.5.3. Non-availability of coconut products

Many of the coconut products are not available in the market. Here the non-availability of coconut products refers to the situation where the products are not available in the shop when the products are demanded by the respondents. Table 4.49 presents such products as mentioned by the respondents.

Table 4.49. Non-available coconut products

Sl. No.	Products	Number of respondents
1	Coconut vinegar	4
2	Coconut palm jaggery	3
Total		7

From Table 4.49, it is found that the number of respondents who faced the situation of non-availability of coconut vinegar and palm jaggery is four and three respectively. It means that these products were not available to the customers when they were in demand. Such situations will adversely affect the market of a product.

4.5.4. Problems

During the course of study, some problems connected with the market potential of selected coconut products were identified, which are presented in Table 4.50.

Table 4.50. Problems in new coconut products

Sl. No.	Problems	Number of respondents
1	Non-availability	27
2	Not affordable	42
3	Lack of effective promotion	31
Total		100

Majority (42%) of the respondents pointed out that the products are not affordable to them. Lack of effective promotion is another problem mentioned by the respondents (31%), and 27 per cent pointed out that products are not available. In addition to this, some respondents opined that quality of the product is low.

Summary and Conclusion

CHAPTER 5

SUMMARY OF FINDINGS AND CONCLUSION

In India, due to multifaceted uses, coconut is referred as 'Kalpavriksha' and provides livelihood to more than 10 million people. Among the major coconut growing states in India, Kerala enjoys the pride of place both in area and production of coconut. However, there is a trend for reduced farm income due to fluctuating prices. Liberalisation and globalisation of the economy has also put pressure on the competitiveness of coconut industry. Therefore, the coconut industry and the farmers depending on them are striving to survive in the economy. In this scenario, best option appears to be diversification and value addition. Efforts for diversification has met limited success and many products have emerged in the market. However, absence of aggressive market initiatives backed by market research has not permitted accelerated growth except for few products. To consume the new products, a revitalization in marketing strategy through market research, market intelligence and marketing information system is required.

In this context, present study was undertaken with the following objectives.

1. To measure the market awareness of value added coconut products;
2. To examine the customers perception towards selected value added coconut products; and
3. To assess the market potential for selected value added coconut products.

The study was conducted in Thrissur district. For the study, four divisions from the corporation area were selected randomly. The unit of the study was households. A sample of 100 households 25 each from each division were randomly selected. The selected products were coconut oil, coconut milk, coconut milk powder, coconut palm jaggery, coconut chips, coconut vinegar, elaneer soda and neera. The study was mainly based on primary data collected from the sample respondents through personal interview method by administering a pre-tested structured schedule. The data thus obtained were analysed by using relevant statistical tools and techniques. Bivariate tables and percentages formed the basis of analysis. To measure the market awareness of coconut products, awareness index was used. Ranking was used to analyse the factors influencing the purchase decision of the respondents. To study the perception and market potential, respective indices were constructed and analysis were made.

The findings of the study are listed below:

1. Majority of the respondents belonged to the age group of 40-55 years closely followed by the age group of above 55.
2. Among the respondents, 74 were females and the remaining 26 were males.
3. 'Hindus' were the major group (57%) of the respondents followed by Christian (42%).
4. Majority of the respondents had a family size of four.
5. The respondents who had secondary education were 48, and 39 per cent of the respondents were graduates.
6. There were 37 employed respondents and 15 retired hands and the unemployed constituted the major group with a share of 48 per cent.
7. Majority of the respondents belonged to the income group of Rs.1,00,000 – 1,50,000.

8. Average monthly family expenditure is Rs.7,900 and majority (44.5%) of the expenditure incurred on food items.
9. People always tend to prefer oil based agro processed products. Frequent purchases are made by consumers with regard to cereals, spices and condiments.
10. The numbers of coconut products fall under the category of least aware group, moderately aware group and highly aware group are 13, 3 and 6 respectively.
11. Nobody is aware about the nata-de-coco and coconut jam.
12. Coconut oil has got the maximum awareness index followed by coconut biscuit and coconut chutney powder.
13. Shop keepers are considered as the most important source of information about the products. Friends and relatives also play a crucial role to pass information regarding the products and the role of advertisement is negligible in creating awareness.
14. Sixty eight per cent of the coconut oil users purchased their requirement on a monthly basis and there is no specific time period for 18 per cent of the respondents. There is no specific timing for the purchase of coconut milk, coconut palm jaggery, coconut vinegar and elaneer soda. In the case of coconut milk powder, there is no specific timing for 80 per cent of the respondents and remaining respondents purchase on a monthly basis.
15. Nobody is purchasing coconut chips and neera as they are not available in the market.

16. The average monthly consumption of coconut oil, coconut milk, coconut milk powder, coconut vinegar, coconut palm jaggery and elaneer soda is 2.7 kg, 400 ml, 500g, 120 ml, 0.8 kg and 800 ml. respectively.
17. Only one respondent is not purchasing coconut oil due to the feeling that the use of coconut oil will create health problem.
18. In the case of coconut milk and coconut milk powder majority of the respondents opined that it is not economical in use.
19. In the case of coconut palm jaggery 55 respondents pointed out that product is not necessary and three pointed out that the product is not available.
20. All the respondents who are aware about the coconut chips pointed out that product is not available in the market.
21. With regard to coconut vinegar 13 respondents opined that the product is not available and 12 respondents suggested that the product is not necessary to them.
22. In the case of elaneer soda, 27 respondents pointed out that 'not necessary' as the reason and five respondents told that product is not available.
23. Of the total aware respondents of neera, six pointed out that the product is not necessary to them, the other reason mentioned is non availability.
24. In the case of coconut oil, brand awareness is 82 per cent and only 12 per cent of the respondents is aware about the brands of coconut milk powder. Nobody is aware about the brands of coconut milk, coconut palm jaggery, coconut vinegar and coconut chips.

25. Kera was the most popular brand of coconut oil. KPL-Sudhi was the next major brand followed by Parachute and KLF-Nirmal. Advertisement is the major source of information followed by shopkeepers.

26. In the case of coconut milk powder, the only brand which is recalled by the respondents is Maggi. Here shopkeeper is the major source of brand awareness and the role of advertisement is marginal.

27. Kera is the most preferred brand of coconut oil followed by KPL-Sudhi. Quality was identified as the most important reason for brand preference followed by reasonable price and easy availability of the brand.

28. For coconut milk powder, Maggi is the brand only preferred by consumers. The reason for preferences include easy availability of the brand and quality.

29. In majority of the households, the decision regarding the purchase of coconut products except elaneer soda was made by housewives independently. But husband is the actual buyer in majority of the households.

30. Coconut oil is used for culinary purpose by 97 per cent of the respondents and as hair oil or/and body oil by 99 per cent of the respondents.

31. In the case of coconut palm jaggery 16 per cent of respondents pointed out that the product is used for edible purpose and five per cent mentioned as the medicinal purpose.

32. Twenty eight per cent of the respondents recorded that coconut vinegar is used as preservative and three per cent mentioned as flavouring agent.

33. In the case of coconut oil 12 respondents were using the same brand for more than 2 years and majority of the brand users were using the same brand for more than one year.
34. In the case of coconut oil, consumers ranked the quality as the major factor that influenced their buying decision followed by health factors and easy availability.
35. With regard to coconut milk and milk powder 'quality' was identified as the major factor influencing the purchase decision.
36. Health factors was ranked as the major factor influencing the purchase decision of coconut palm jaggery followed by quality and influence of others.
37. In the case of coconut vinegar and elaneer soda, quality was the major factor that influence the purchase decision.
38. Consumers perceived the awareness level as high with respect to coconut oil and less with respect to coconut chips, coconut vinegar, elaneer soda and neera.
39. With regard to coconut milk, coconut milk powder, coconut chips, elaneer soda and neera consumers are not ready to use the products, even if they are given information about it.
40. Consumers perceived that price is not favourable with respect to all selected coconut products.
41. Consumers perception on quality with respect to coconut oil is high and moderate with respect to coconut palm jaggery.

42. Consumers perceived that packing with respect to coconut oil, coconut milk and coconut milk powder is moderately favourable.
43. Consumers perceived that coconut oil is readily available in the market and it is not so in the case of other products.
44. Consumers perceived that freshness of coconut oil is most favourable.
45. Consumers perceived that nutritional value is moderately favourable with respect to coconut oil and coconut palm jaggery.
46. Consumers perceived that availability of convenient packing and size is moderately favourable with respect to coconut oil and coconut milk powder.
47. Consumers perceived that coconut oil, coconut milk and coconut milk powder are most convenient in use and moderately convenient with respect of coconut palm jaggery.
48. Consumers perceived that colour is moderately favourable in the case of coconut oil, coconut milk and coconut milk powder and for all other products it is least favourable.
49. Consumers perceived that taste of coconut milk powder and coconut oil is moderately favourable and most favourable respectively.
50. Consumers perceived that odour of coconut oil is most favourable and all other products fall in least favourable category.
51. Consumers perceived that purity is least favourable for all coconut products.
52. In terms of hygiene, consumers perceived that it is moderately favourable with respect to coconut oil, coconut milk and coconut milk powder.

53. Consumers perceived that promotional efforts are moderately favourable in the case of coconut oil and for all other products it is least favourable.
54. In terms of shelf life and economy, consumers perceived that it is least favourable towards all coconut products.
55. Consumers perceived that there is no strong demand and intention to buy the coconut products except coconut oil.
56. Coconut oil has the highest market potential and followed by coconut vinegar and coconut chips.
57. Among the products, neera has only a least market potential as it is evident from the poor index of 0.4.
58. Potential to awareness index is very high in the case of coconut chips and coconut vinegar and it is the clear indication of highest market potential if it is possible to increase the awareness level of these products.
59. The number of respondents who experienced the situation of non-availability of coconut vinegar and coconut palm jaggery is four and three respectively.
60. Respondents identified problems in the new coconut products which includes non availability, non-affordability and lack of effective promotion.

To conclude, the present study made an explorative search into the market potential of value added coconut products. The study revealed that the awareness level of consumers towards value added coconut products is marginal. Nobody is aware about the products like nata-de-coco and coconut jam. From the study it can be inferred that the newly designed and launched products failed to attract the customers attention.

The study highlights the need for creating awareness about the coconut products among the consumers. Study reveals that at present the role of advertisement is negligible in creating awareness and the shopkeepers and friends and relatives are considered as the most important sources of information regarding the products. So more promotional efforts are necessary from the part of producers.

Only in the case of coconut oil, advertisement plays an important role in creating brand awareness. Quality has also an important role in the purchase decision of various coconut products. Hence, while designing the promotional strategies various product attributes may be taken into account.

In the perception analysis it is found that majority of the respondents have only least favourable perception towards various attributes of the products, because many respondents are not aware about the products or they are ignorant about the attributes of the products.

Study reveals that coconut oil has the highest market potential. But the market potential of coconut milk and coconut milk powder is low. As the quality is the major factor influencing the purchase decision, the possibility to increase market potential exists only if the quality is increased upto the expectations of the consumers. Coconut chips and coconut vinegar have high market potential even though the awareness is less. But there is only limited potential for elaneer soda and neera. In general, it may be inferred that the coconut industry has a bright future with respect to product diversification and value addition provided they 'understand' the consumers and 'stay' with the consumers.

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Annexure

MARKET POTENTIAL OF VALUE ADDED COCONUT PRODUCTS

INTERVIEW SCHEDULE FOR HOUSEHOLD CONSUMERS

(For Academic purpose only)

1. Name and Address of the respondent :

2. Area of residence (Ward No.) :

3. Age :

4. Sex : Male ☐ Female ☐

5. Religion: Hindu ☐ Christian ☐ Muslim ☐ Others (specify) ☐

6. Educational qualification:

Illiterate ☐ Secondary ☐ Graduate ☐ Professional ☐ Technically qualified ☐

7. Occupation: Private Sector ☐ Government ☐ Quasi-Government ☐

Agriculture ☐ Self employed ☐ Other (specify) ☐

8. Nature of family: Joint ☐ Nuclear ☐

9. Family details:

Sl. No.	Name	Relationship with respondent	Age	Sex (M/F)	Educational qualification	Occupation	Monthly income (Rs.)

10. Total annual income of the family (Rs.)

< 18,000 ☐ 18,000 – 36,000 ☐ 36,000 – 60,000 ☐

60,000 – 100,000 ☐ >100,000 ☐

11. Expenditure particulars (monthly):

Sl. No.	Items	Amount (Rs.)
1	Food items	
2	Clothing	
3	Rent	
4	Recreation (entertainment, newspaper etc.)	
5	Electricity charge	
6	Water charge	
7	Telephone charge	
8	Fuel charge	
9	Others (specify)	

12. Do you purchase agro-processed products?

Yes ☐ No ☐

13. If 'Yes', indicate the nature of purchase of the following products as follows:
A – Always; F – Frequently; O – Occasionally; R – Rarely; N – Never.

Cereal based ☐ Pulses based ☐ Fruit and Vegetables based ☐

Spices and Condiments ☐ Oil Seeds ☐ Others (specify) ☐

14. Market awareness of coconut products;

Sl. No.	Products	Awareness					Source of awareness*
		Completely aware	Mostly aware	Moderately aware	Slightly aware	Not aware	
1	Coconut oil						
2	Coconut milk/cream						
3	Coconut milk powder						
4	Coconut palm jaggery						
5	Coconut chips						
6	Coconut vinegar						
7	Elaneer soda						
8	Neera						
9	Coconut chutney powder						
10	Desiccated coconut						
11	Nata-de-coco						
12	Coconut ice cream						
13	Packed tender coconut water						

14	Snowball tender coconut						
15	Coconut toddy						
16	Coconut burfi						
17	Coconut candy						
18	Coconut jam						
19	Coconut biscuit						
20	Coconut virgin oil						
21	Elaneer sharjja						
22	Elaneer cool						

* *1. Advertisement* *2. Shopkeepers* *3. Friends and relatives*
4. CDB *5. Exhibitions and demonstrations* *6. Others (specify)*

15. Consumption pattern of coconut products:

Sl. No.	Products	Whether aware or not (Yes/No)	Whether consumed or not (Yes/No)	If 'No', give reason (NA/NE/HH/NN/ Others (specify)*	If 'Yes' frequency of purchase** (W/F/M/NST)	Quantity of purchase per month*** (G/K/L)	Source of purchase@
1	Coconut oil						
2	Coconut milk						
3	Coconut milk powder						
4	Coconut palm jaggery						
5	Coconut chips						
6	Coconut vinegar						
7	Elaneer soda						
8	Neera						

* NA – Non-availability; NE – Not economical in use; HH – Hazardous to health; NN – Not necessary
** W – Weekly; F – Fortnightly; M – Monthly; NST – Not specific time Period
*** G – Gram; K – Kilogram; L – Litre
@ 1. General Provision Store, 2. Wholesalers; 3. Super Markets; 4. Margin Free Super Markets; 5. Co-operatives

16. Whether any of the organizations directly approached you for offering their products? : Yes ☐ No ☐

17. If 'Yes', which are those organization?

Private agencies ☐ SHGs ☐ CDB ☐ Co-operatives ☐ Others (specify) ☐

18. Brand awareness and brand preference of coconut products:

Sl. No.	Products	Whether aware of the available brand (Yes/No)	If 'yes' give names of brands you know	Source of awareness* (A/S/CDB/ F&R/E&D)	Preferred brand	Reason for preference** (Q/EA/RP/ AA/AP/SI)
1	Coconut oil					
2	Coconut milk					
3	Coconut milk powder					
4	Coconut palm jaggery					
5	Coconut chips					
6	Coconut vinegar					
7	Elaneer soda					
8	Neera					

* A - Advertisement; S - Shopkeepers; CDB - Coconut Development Board; F&R - Friends and Relatives; E&D - Exhibition and Demonstration

** Q - Quality; EA - Easy Availability; RP - Reasonable Price; AA - Attracted by Advertisement; AP - Attractive Packing; SI - Shopkeepers' Influence

19. Who is the decision maker/actual buyer with respect to following products?

Sl. No.	Products	Decision maker* (H/W/J/C/O)	Actual buyer* (H/W/J/C)
1	Coconut oil		
2	Coconut milk		
3	Coconut milk powder		
4	Coconut palm jaggery		
5	Coconut chips		
6	Coconut vinegar		
7	Elaneer soda		
8	Neera		

* H - Husband; W - Wife; J - Jointly; C - Children; O - Others

20. For which purpose you are using the product (Rank them in order of preference)

Sl. No.	Products	Specify the uses* (1 / 2 / 3 / 4 / 5 / 6 / 7)
1	Coconut oil	
2	Coconut milk	
3	Coconut milk powder	
4	Coconut palm jaggery	
5	Coconut chips	
6	Coconut vinegar	
7	Elaneer soda	
8	Neera	

* 1. Edible purpose; 2. Culinary purpose; 3. Preservation; 4. Flavouring; 5. Refreshment; 6. Medicinal; 7. Others (specify)

21. Which are the motivational factors influencing in your buying decision (Rank them in order of preference)

Sl. No.	Products	Specify the factors* (1 / 2 / 3 / 4 / 5 / 6 / 7 / 8)
1	Coconut oil	
2	Coconut milk	
3	Coconut milk powder	
4	Coconut palm jaggery	
5	Coconut chips	
6	Coconut vinegar	
7	Elaneer soda	
8	Neera	

* 1. Convenient to use; 2. Quality; 3. Easy availability; 4. Reasonable price; 5. Influence of advertisement; 6. Convenience in storing; 7. Health factors; 8. Influence of others

22. Shift in buying intention

Sl. No.	Products	Currently used brand	Duration for which the brand has been in use* (1/2/3/4/5/6)	Have you shifted brands in past 2 years, if yes, from which to which	If 'yes', reason for shift	Do you want to shift a new brand (Yes/No)	If 'yes', reason
1	Coconut oil						
2	Coconut milk						
3	Coconut milk powder						
4	Coconut palm jaggery						
5	Coconut chips						
6	Coconut vinegar						
7	Elaneer soda						
8	Neera						

* 1. < 1 month; 2. 1-2 months; 3. 2-6 months; 4. 6-12 months; 5. 1-2 years; 6. >2 years

.23: Consumers perception towards the selected coconut products - indicate your perception as follows:
SA - Strongly Agree; A - Agree; NO - No Opinion; D - Disagree; SD - Strongly Disagree

Sl. No.	Statements	Products							
		Coconut oil	Coconut milk	Coconut milk powder	Coconut palm jaggery	Coconut chips	Coconut vinegar	Elaneer soda	Neera
1	People are well aware of the product								
2	People are ready to use the products if they are given information about it								
3	The price of the product is reasonable								
4	The quality of the product is acceptable								
5	The product has attractive packing								
6	The product is readily available								
7	The product has adequate freshness								
8	The product has necessary nutritional value								
9	The product is available in convenient packing and size								
10	The product is convenient for use								
11	The product has pleasant colour								
12	The product has good taste								
13	The product has pleasant odour								
14	The product is sufficiently pure and free from foreign material								
15	The product is hygienic								
16	The product has effective promotion								
17	The product has long shelf life								
18	The product is economical in use								
19	The product has good demand in the market								
20	People are intend to buy the product within the next six months								

24. Market potential of coconut products. Do you intend to buy the coconut products within the next six months

Sl. No.	Products	No chance	Slight chance	Fair chance	Good chance	Strong chance	For certain
1	Coconut oil						
2	Coconut milk						
3	Coconut milk powder						
4	Coconut palm jaggery						
5	Coconut chips						
6	Coconut vinegar						
7	Elaneer soda						
8	Neera						

25. If you intend to purchase the coconut products kindly indicate expected demand, quantity preferred for single purchase and stores preferred

Sl. No.	Products	Expected demand (monthly)		Preferred quantity for single purchase		Stores preferred*
		Quantity	Value	Quantity	Value	
1	Coconut oil					
2	Coconut milk					
3	Coconut milk powder					
4	Coconut palm jaggery					
5	Coconut chips					
6	Coconut vinegar					
7	Elaneer soda					
8	Neera					

* 1. General Provision Store; 2. Wholesalers; 3. Super Markets; 4. Margin Free Super Market; 5. Co-operatives

26. Whether you have faced a situation of non-availability of coconut products in market?

Always ☐ Frequently ☐ Occasionally ☐ Rarely ☐ Never ☐

27. If 'Yes', specify the products:

28. How would you liked to be informed about the new products?

Advertisement ☐ Shopkeepers ☐ Friends and Relatives ☐

Exhibitions and Demonstrations ☐ Others (specify) ☐

29. What are the problems you could find in the new coconut products?

Lack of effective promotion ☐ Non-availability ☐

Not affordable ☐ Others (specify) ☐

30. Do you have any suggestion regarding the new product development/product modification in the existing products.

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MARKET POTENTIAL OF VALUE ADDED COCONUT PRODUCTS

By

SALI K. S.

ABSTRACT OF THE THESIS

submitted in partial fulfillment of the requirement for the degree of

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ABSTRACT

In India, due to multifaceted uses, coconut is referred as 'Kalpavriksha' and provides livelihood to more than 10 million people. Among the major coconut growing states in India, Kerala enjoys the pride of place both in area and production of coconut. However, there is a trend for reduced farm income due to fluctuating prices. Therefore, the coconut industry and the farmers depending on them are striving to survive in the economy. In this scenario, best option appears to be diversification and value addition.

In this context, present study was undertaken with the following objectives:

1. to measure the market awareness of value added coconut products;
2. to examine the customers perception towards selected value added coconut products; and
3. to assess the market potential for selected value added coconut products.

For the study, four divisions from Thrissur Corporation area were selected randomly. A sample of 100 households, 25 from each division were randomly selected. The selected products were coconut oil, coconut milk, coconut milk powder, coconut palm jaggery, coconut chips, coconut vinegar, elaneer soda and neera. The study was mainly based on primary data collected from the sample respondents through personal interview method by administering a pre-tested structured schedule. The data thus obtained were analysed by using the tools like bivariate table, percentages, ranking, regression and indices.

The study revealed that the newly designed and launched products failed to attract the customers attention. It was also revealed that at present the role of advertisement is negligible in creating awareness. The shopkeepers and friends

and relatives were considered as the most important sources of information regarding the products.

In the perception analysis, it was found that majority of the respondent have least favourable perception towards various attributes of the products because many respondents are not aware about the products or they are ignorant about the attributes of the products.

The study revealed that coconut oil has high market potential. But the market potential of coconut milk and coconut milk powder were very low. At the same time, coconut chips and coconut vinegar showed a high market potential eventhough the awareness is less. In the case of elaneer soda and neera, both awareness and market potential found to be very low.