

NEW TRENDS IN PRODUCTS, SERVICES & MANAGEMENT

VOLUME - 2

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Chapter - 1

Importance of Customer Feedback for New Product Development of Samsung Mobile Phones

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Abstract

The growing needs of customers and their expectations play a major role in product development. A major input for this developmental process comes from customer feedback. The product development process is a sequence of all the required activities that a company must perform to develop, manufacture, and sell a product. In this regard expectations from market and customers must be mapped into the product development process in order have acceptability.

This paper attempts to study the feedback of customers and its impact of new product development with special reference to Samsung mobile phones.

Keywords: Customer feedback, new product development

Introduction

The product development process is a sequence of all the required activities that a company must perform to develop, manufacture, and sell a product. These activities include marketing, research, engineering design, quality assurance, manufacturing, and a whole chain of suppliers and vendors. The process also comprises all strategic planning, capital investments, management decisions, and tasks necessary to create a new product. An important part of product development are customers. Customers that use your products are the best source of information when it comes to making changes or altering decision choices.

Feedback will show if your customers are satisfied with what you have currently made or if there's a lukewarm response that should prompt you to rethink your product. Gathering customer feedback has several benefits when

you are building a product. You can discover how people feel about a potential feature or validate assumptions about user behaviour and market trends. Speaking to customers also allows you to spot unmet needs and identify use cases you had not previously considered. The insight you gain from these discussions help you identify improvements, add functionality, new features, or create new solutions to address people's challenges. Giving people a way to voice their opinions can also help you foster a positive relationship with them. When customers know that you care about what they have to say, they are more likely to feel invested in your offering and be willing to help you improve.

There are different ways to collect data from customers like polls, focus groups, interviews and surveys etc. Surveys allow product managers to ask customers questions in order to obtain their opinions. They are a low-cost, scalable way to capture feedback on a wide variety of topics. Survey data can help you turn your assumptions into facts and support or disprove hypotheses you have about customers and the product.

Samsung Inc is the second largest cell phone manufacturer and the largest information technology corporation in the world. At the beginning of 2016, the company had a total of 478 retail stores distributed in seventeen countries

The company's mission aims at ensuring that consumers are accorded the best experience by provision of easy-to-use software, innovative hardware and sleek product design. The company is driven by various goals and objectives. Among them is bringing the ultimate user experience to all consumers through its technologies and innovative products. Samsung Inc also aims at increasing sales volume by launching new products, opening more stores, using smart market tactics and streamlining production

The company's culture is highly innovative. It is recognized among the most innovative companies around the globe. There is training of employees that ensures they are instilled with this work ethic. Employees are encouraged to be innovative by contributing ideas to the company's development processes.

Samsung recruits its employees on the merit of their creative abilities, knowledge and skills. There is a great emphasis on creativity among all the employees. This is more important for employees that are involved with product development and design processes (Gupta & Prinz Inger, 2013). This culture has enabled Samsung to gain the ability of developing solutions for consumer and business needs.

Survey of Existing Literature

There is lot of literature available for new product development and the impact of customer's feedback and expectations in the product development process.

New product consultants, exemplified by Massey, (1980) may be employed for the provision of new ideas and their subsequent development, as may university research centres which, according to Hise et al. are grossly under-utilised. Companies may actively seek ideas from suppliers, agents or other organisations or individuals in chains in which they are involved, as well as conducting national or international patent searches in their fields of interest. Furthermore, the role of the individual inventor is often under-valued, especially it seems, in the UK (Hope, 1979).

However, sooner or later, any company adopting the market concept must, by definition, look to the consumer for some indication of the direction in which to seek for new product ideas. Gap analysis is a structured technique used to gain an indication of customer perception of a product market, and is enthusiastically advocated by O'Mulloy (1969) and Lanites (1970). The essential aspects of the technique involve the identification and measurement of the differences (along a number of attribute dimensions) between products available for the satisfaction of the same basic need. When such a "perceptual map" is contrasted with the attributes of the idealised products, new product opportunities may be presented in terms of combinations of attributes for which there is an unsatisfied demand. Whilst useful for gaining an insight into consumer requirements, the method has the major flaw that the resultant ideas, or more correctly, concepts, relate only to the existing situation, and therefore encourage evolutionary product development only.

Song and Montoya (1998), contends that new product development is a high-risk proposition for firms to start, as it involves higher risk in targeting a budding market segment where customer wants are hidden and service or product requirements are unspoken. On the other hand, new products often create considerable opportunities for firms to differentiate their offering (product or service) and helps in attaining a lead from competitors through cost, quality, style and flexibility. Mueller, (1997), proposes that the innovating firm may achieve a first mover advantage that would create considerably better results for the company in the short and long term. However, first mover advantage may not always result in profiting as customers, imitators and rival firms may quickly emulate your success and take away a greater share of the market share (Teece, 1986).

Research Methodology

Objectives of the Study:

- To study the new product development process
- To study and analyse the customer feedback for Samsung phones
- To analyse the implications of customer feedback in new product development

Sampling

A total sample 300 was collected from market and individual customers. Sampling method was random sampling

Research instrument: Survey conducted through questionnaires

1. Data Collection:

Primary Data:

Primary data was collected through random sampling.

Secondary Data:

Secondary data is collected from secondary sources like magazines, websites, blogs etc.

Findings

- Almost 80% of the respondents were above the age group of 25 years and above with few below 20 years
- The respondents were students, business men, private and government employees
- The awareness of Samsung phones was very high with more than 90%
- The product awareness of Samsung was good as most of them knew about Samsung phones, tabs, laptops and headphones
- The monthly expenses on phones were in the range of 100-400 Rs./month for most of the respondents
- The source of information about Samsung came equally through newspapers, advertisements, hoarding and word of mouth publicity
- Almost 60% of the respondents were using Samsung products as status symbol while few for design and few others were influenced by advertisements
- The respondents were using Samsung products for Android software, gaming and cloud services

- Almost half of the Samsung users were satisfied by the services provided
- Almost all respondents agreed that service centres are available for Samsung products.
- The satisfaction level of customers was high for Samsung products
- Most of the respondents agreed to recommend Samsung products to others

Conclusion

The customer feedback on Samsung products is very important for product development. The survey showed the customer's opinion and expectations from Samsung brands. Though most of the customers were satisfied with the product offers we need to dig deep into the insights for more information related to product development. From the secondary data it is evident that Samsung promotes innovation and employee engagement for new product development, a more comprehensive study would yield better results and insights.

Suggestions for Future Research

The company should implement tools like Quality Function Deployment for getting more information on customer requirements and expectations. This can be done through third-party research on existing and potential customers. The company should also conduct extensive research on competitors' products and also focus on technological innovations in order to introduce new and innovative products in the market.

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Chapter - 2

A Study on Enhancement of Supply Chain Visibility in FMCG Industry

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Abstract

The complexity of the supply chain structure, as well as the accompanying challenges and tendencies, are demonstrated through examples gleaned from interviews. In this study, the informants provided examples of coordinating and controlling the supply chain in the face of obstacles. Supply planning and demand forecasting, production planning, inventory management, transportation disruption management, and in-time transportation and delivery are the primary problematic operations that are most influenced by these difficulties and where coordination is challenging. This chapter per topic contains an in-depth discussion of why certain activities are difficult to coordinate and how this might be improved.

Keywords: Supply Chain, FMCG Industry.

Introduction

The relationship of characteristics in the supply chain and its complexity is not just a simple linear structure. A small change does not initiate only a chain reaction but often leads to exponential effects on managing the interactions between elements in the chain (Cheng *et al.* (2014). Competition is not only focused on company versus company anymore, but has been shifted towards supply chain versus supply chain, resulting in more challenges. Many drivers can be found in literature that influences the supply chain complexity, which echoes true the whole chain.

The diversity of products is related to the level of heterogeneity and the number of produced products. If the variety of products manufactured increases, the complexity of the processes and planning of the product flows are also increasing. The same holds for the number of components needed to

produce a particular product since more interactions are needed, more risks can occur, and decision making will become more complex (Isik (2011); Serdarasan (2013); Bozarth *et al.* (2009)). Internally the number of information flows is a key characteristic indicating the complexity. These information flows are mainly determined by the number and diversity of products and components, the volumes, and the number of plants. High produced volumes do not necessarily indicate a more complex process. Often low volume production processes contain a higher level of detail, more jobs that must be managed, and a larger number of interactions between different areas in the plant. The volumes and the characteristics of the products (number, diversity, and components) define the complexity. Another main driver for complicated supply chains is the degree of manufacturing schedule instability. This is a major issue for companies resulting in low service levels, excessive inventory levels, or stock outs.

Many businesses are growing and resulting in the need to extend current plant facilities or additional manufacturing locations. This clearly results in extra flows of goods, information flows and relationships that need to be managed. Lastly, the inter-dependency of products, items, and processes of products may cause complexity since interdependent states cannot be operated without the other state's influence. High costs are associated with changeovers, and instability in the production schedule creates issues impacting lower-level planning and control of activities (Bozarth *et al.* (2009)).

The degree of differentiation among suppliers is also a factor related to the size and technologies used by the different suppliers. The complexity upstream increases when the number of firms and suppliers a company is cooperating with is large. This means that interaction is needed through various information flows and material flows, and in addition, the number of supplier relationships that need to be managed increases. (Cheng *et al.* (2014), Bozarth *et al.* (2009), *et al.* (2010b), Isik (2011), Serdarasan (2013). This determines the number of resources that are needed to manage them (*et al.* (2010), Choi and Krause (2006), Serdarasan (2013). Other key drivers for upstream complexity are long supplier lead times and the reliability of the suppliers. Long lead times and unpredictability are forcing manufacturers to adjust their processes and planning at the last moment. Long lead times are a main factor influencing the performance of the inventory control process and creating the bullwhip effect. This effect can be described as an increasing swing in inventory in response to shifts in consumer demand as one moves further up the supply chain. This lead time and uncertainty increases with global sourcing. The latter also creates other consequences besides

uncertainty. Companies need to deal with other laws influencing import and export, different currencies used, and cultural differences (Bozarth *et al.* (2009). Furthermore, the more suppliers and manufacturers are spread worldwide, the harder it is for the company to coordinate geographically spread activities (Choi and Krause (2006). The number of suppliers that can produce or offer a certain product or material, affects the level of dependency of a supplier. When the manufacturer depends on one or a few suppliers, the level of competition is lower and options for negotiations are smaller. This can result in high costs for the company and lack of motivation for efficiency for this powerful supplier. The complexity increases with the level of interdependence of suppliers (Choi and Krause (2006), Isik (2011), Serdarasan (2013), Bode and Wagner (2015). The relationships between the suppliers' supplier and also between various suppliers can be different and decisive. Close interrelationships of suppliers can result in information sharing and collaboration for better coordination, knowledge, and improved processes.

The downstream complexity has similarities with the internal and upstream complexity since the complexity is characterised by the number of customers and heterogeneity in customer needs. When the number of customers increases, the management of relationships, tasks, orders, and logistics becomes more complicated. When the desires and wishes of customers are diverse and when more heterogeneity exists, the potential for conflicting manufacturing tasks can occur. Also, the number of tasks that need to be performed with its corresponding complexity to create multiple products, increases (Cheng *et al.* (2014), Bozarth *et al.* (2009), Isik (2011). The FMCG supply chain's main complexity and issue is the demand variability and the complexity of estimating this demand. Variability in demand can result in difficulties regarding reordering and stock levels. Re-ordering to a fixed stock levels can sometimes result in high inventories levels and at other moments to stock outs. Another problem driving the complexity is that shorter product life cycles put more pressure on the number of parts and products needed in a certain time period (Bozarth *et al.* (2009), Alias *et al.* (2014), Serdarasan (2013). This can arise when only relatively small fluctuations exist in demand, but coordination in ordering policies at different points in the supply chain is lacking (bullwhip effect). Demand variability is therefore very hard to manage (Bozarth *et al.* (2009)).

The goals of stakeholders in the chain are often different and can be contradictory. Continuous improvements and search for possibilities and agreements with supply chain partners are therefore needed, but are time-consuming and hard (Isik (2011), Cheng *et al.* (2014)). The degree of

predictability and uncertainty are related to each other and are a main driver of problems in supply chains. In some markets, the demand is more predictable, like seasonal products as ice cream, and can positively influence efficiency. However, the inability to accurately predict is a main issue for supply chain managers. Overall complexity drivers can also be mentioned, like the variety of total supply chain members that can simultaneously interact with one another, resulting in more information flows. These supply chain members may also be members of other supply chain networks making logistics complex.

The degree of predictability and uncertainty are related to each other and are a main driver of problems in supply chains. In some markets, the demand is more predictable, like seasonal products as ice cream, and can positively influence efficiency. However, the inability to accurately predict is a main issue for supply chain managers. Lastly, the demand of predictability and the maturity of IT systems and possibilities to implement new technologies are important. The latter can support complexity and create efficiencies in both material as information flows (Cheng *et al.* (2014), Serdarasan (2013), Blecker *et al.* (2005), Vogel and Lasch (2016)).

Besides the supply chain structure and these trends that drives the industry, other complexity drivers are investigated. These complexity drivers are divided into internal manufacturing complexity, upstream complexity, downstream complexity, and overall supply chain complexity. The analysis shows the factors that make supply chain activities and its coordination complex. These drivers are strongly related to reasons why supply chain visibility is hard to be enhanced. Internally this is hard since the number and diversity of products, components and processes are large, making it hard to have a clear overview at all times. The same holds for the upstream complexity, driven by the number of suppliers and dependency on the suppliers.

Research Design

In order to understand supply chain visibility one has to understand the information that is collected and exchanged across the supply chain and its associated value. The challenges impeding supply chain visibility should also be recognised.

The term 'supply chain visibility' is often used in practice and literature. Nonetheless, the concept is ambiguous, and various definitions are proposed. The investigation of supply chain visibility as definition has shown that all explanations found in articles are related to the ability of information. Wei and

Wang (2007) state that visibility is the extent to which actors have access to information, and Schoenthaler (2003) states that visibility implies that important information is available to those who need it. The specific type of information intended with supply chain visibility is not defined specifically by authors, but some define the aim of available information in articles. Wei and Wang (2007) for instance, state that the information is available to those who need it for monitoring, controlling, and changing supply chain strategy and operations from service acquisitions to delivery. A more general definition of supply chain visibility is defined as the extent to which a supply chain has access to or share information which they consider as key and useful for their operations Barratt and Oke (2007). Others emphasize that supply chain visibility aims for a better decision-making process and mitigates risks (Tohamy *et al.* (2003), McCrea (2005)).

Objective of the Study

- To understand the importance of visibility in supply chain management.

Statement of the Problem

Often the supply chain process is not as transparent as expected. This research intends to throw some light on this topic in FMCG industry. Understanding the characteristics of fast moving consumer goods, the structure and trends affecting supply chain management are important to understand the complexity of coordinating FMCG supply chains. Besides the supply chain structure and these trends that drives the industry, other complexity drivers need to be investigated.

Scope of the Study

The deliverable of this research will include an in-depth exploratory research about the current state of coordination in the FMCG industry, and a general understanding into challenges of receiving the right information to enhance supply chain visibility. The scope of the study is limited to FMCG industry.

Hypotheses

The research questions answered in this research are:

- What is the state of the art of coordinating the FMCG supply chain?
- What information can be collected and exchanged across the supply chain, and what is the value of this information?
- What are the challenges impeding supply chain visibility?

- How can supply chain visibility be assessed?

Questionnaire Design

Questionnaire has been designed with 15 questions for the survey purpose. The survey was prepared on Google forms and has been circulated via Emails and WhatsApp to supply chain consultants.

Method of Data Collection

Primary data collection: I have collected primary data through interview and online survey using google forms. Primary data is a type of data that is collected by researchers directly from main sources through interviews, surveys, experiments, etc. Primary data collection involves gathering data from the first - hand experiences.

Sampling Size

Convenience sampling: Convenience sampling involves using respondents and recruiting friends to forward your survey to relevant personnel, collecting data from locations that are nearby, sending a survey in the mail, or sharing a link on social media.

The sample size for the interview is five and the sample size for the survey is 35

Limitation of the Study

- Due to the time constrain sample size is limited to 35.
- The study cannot be generalized.
- The data may be biased.
- The validation interviews for confirmation are not carried out due to time constrain

Data Analysis

The research uses two methods to collect information a survey and interviews.

Survey

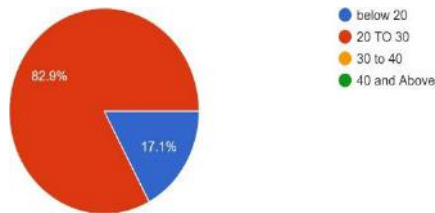
A survey was conducted. The questionnaire is as follows:

1. Name
2. Age group
3. Occupation

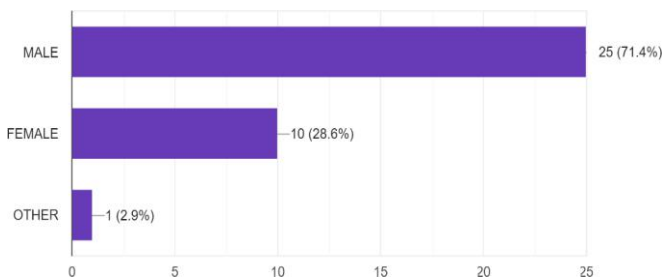
4. Phone number
5. E-Mail address
6. Gender
7. Is the supply chain important from a strategic point of view
8. Are the right people positioned in the right places
9. Is the supply chain effective and optimized
10. Is the supply chain quality engineered in FMCG industry
11. Has the supply chain been developed
12. Is there a requirement to increase the visibility of supply chain in FMCG industry
13. What makes a product successful
14. Are we using right metrics and incentives
15. What are the risks

There are 35 responses and the results are as follows:

- Age group:

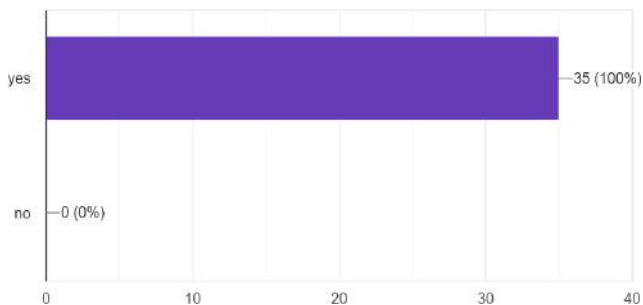


- The occupation varied from business managers, product managers, supply chain consultants, team leads etc.
- Gender



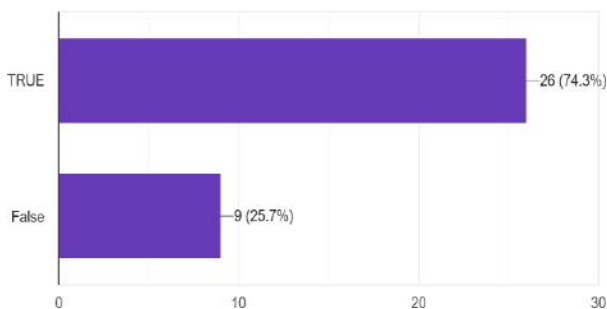
25 respondents are male, 10 respondents are female and 1 other.

- Is the supply chain important from a strategic point of view



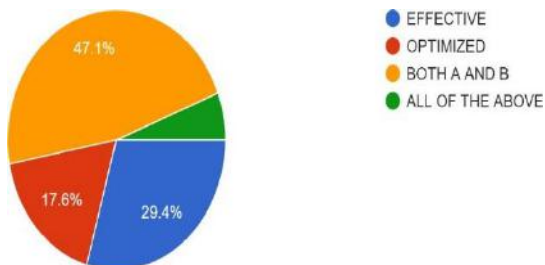
All the respondents feel that supply chain management is important from a strategic point of view.

- Are the right people positioned in the right places



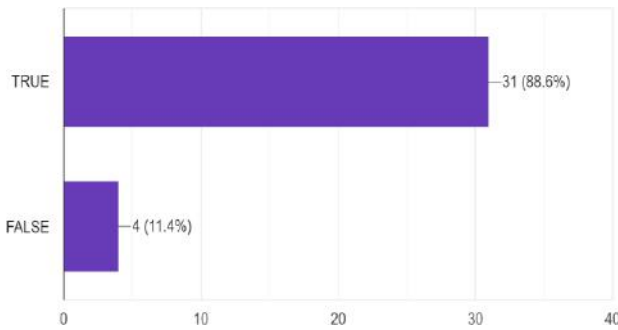
74% of the respondents believe that right people are positioned in the right places while 26% feel otherwise.

- Is the supply chain effective and optimized



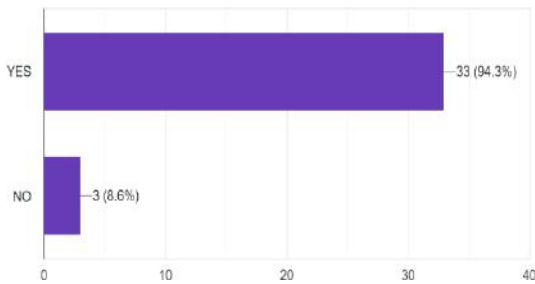
Majority of the respondents feel that the current scenario for supply chain is effective and optimized

- Is the supply chain quality engineered in FMCG industry



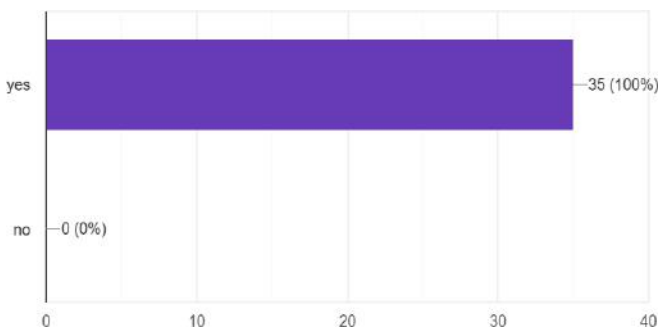
89% of the respondents find that the level supply chain quality in terms of ingenuity engineering is sufficient.

- Has the supply chain been developed



94% of the respondents feel that supply chain has developed over the past decade.

- Is there a requirement to increase the visibility of supply chain in FMCG industry

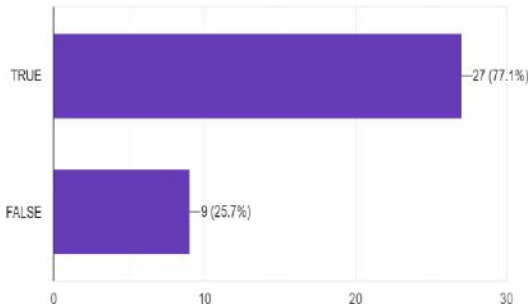


100% of the respondents feel that there is a need to increase the visibility of supply chain in FMCG industry.

- What makes a product successful

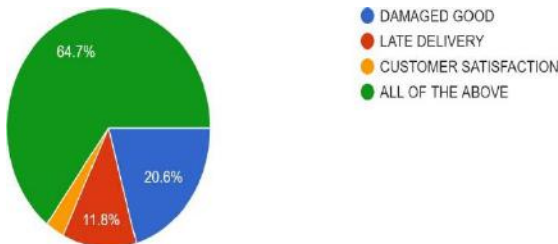
Majority of the respondents feel that all the three quality, quantity, and brand name are responsible for a product to be successful.

- Are we using right metrics and incentives



77% of the respondents believe that we are using the right metrics and incentives,

- What are the risks



These are the responses to the questionnaire prepared regarding supply chain management. The most interesting results were the barriers observed that impede the supply chain visibility. In both studies, the technical and financial barriers were mentioned. However, mainly the importance of social and cultural barriers were widely discussed in literature and interviews.

Interpretation

Inventory information, sales information, order information, forecast information, and product information are the main types of information in the supply chain, according to a literature assessment. Information on transportation disruptions, new products, development plans, promotional events, and customer feedback on products and services are also important. Improved supply chain visibility has a favourable impact on efficiency, coordination, responsiveness, and risk in general. It also raises the bar for transparency and collaboration. Additionally, the benefits of visibility can be demonstrated in cost savings and better customer service. Because many

supply chain elements are interconnected, determining the exact value of given information is difficult. Customer and supplier information can be beneficial to both the receiving and sharing parties. Specifically, the primary one.

Barriers found in Supply chain visibility are listed as follows:

Financial Barriers

- High investment cost Fawcett *et al.* (2007)
- Costs of maintenance Khurana *et al.* (2011)
- Costs of specialized manpower Khurana *et al.* (2011)
- Costs of training Khurana *et al.* (2011)
- High costs consultants Özkanlısoy and Akkartal (2021)
- Unclear financial results Özkanlısoy and Akkartal (2021)

Technological Barriers

- Lack of technical support Özkanlısoy and Akkartal (2021)
- Complexity of implementing advanced systems Fawcett *et al.* (2007)
- Enterprises do not know where to start digitization Khurana *et al.* (2011)
- Incompatibility / integration problems Fawcett *et al.* (2007)
- Lack of efficiency and effectiveness of information system Lotfi *et al.* (2013)
- Variety of hardware, software, data standards Lotfi *et al.* (2013)

Legal Barriers

- Formal rules, guidelines, procedures and regulations Willem and Buelens (2009)
- Security and privacy concerns

Social-Cultural Barriers

- Resistance to change Özkanlısoy and Akkartal (2021)
- Lack of technology mindset Fawcett *et al.* (2007)
- Culture (information sharing) Fawcett *et al.* (2007)
- Different values/goals/priorities Khurana *et al.* (2011)
- Lack of commitment and willingness to change Fawcett *et al.* (2007)

- Lack of trust Khurana *et al.* (2011)
- Risk Fawcett *et al.* (2007)
- Reliability Kumar and Pugazhendhi (2012)
- Fear of authority loss Kumar and Pugazhendhi (2012)

Organizational Barriers

- Poor infrastructural facilities Kumar and Pugazhendhi (2012)
- Fear of losing company stability and market position Barson *et al.* (2000)
- No insight into benefits Khurana *et al.* (2011)
- Lack of managerial support Weippert *et al.* (2003)
- Lack of training and experience Khurana *et al.* (2011)
- Level of bureaucracy and administrative control Khurana *et al.* (2011)
- Accuracy of shared information Lotfi *et al.* (2013)

Interviews

In this section, findings from interviews with FMCG supply chain managers and consultants of various FMCG companies are summarized. During the interviews, the problems and potential for improving supply chain visibility in the FMCG business are discussed. The interview topics were grouped into four categories: supply chain structure analysis, problem identification, visibility related information, and visibility needs. This chapter summarises and divides the answers supplied by supply chain managers and consultants into the main themes mentioned.

Interviewed Consultants:

Name	Department	Function	Years of experience in Supply Chain
Expert 1	Resources Logistics	Supply chain manager	15 years
Expert 2	Resources Logistics	Supply chain manager	12 years
Expert 3	Resources Logistics	Supply Chain and Operations senior consultant	8 years
Expert 4	Data & Digital Consultancy	Supply Chain and Operations consultant	7 years
Expert 5	Multi-Project Management	Project Manager –	13 years

	& Consultancy Multinationals	Consultancy	
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Interview with Consultants

Experienced personnel in the FMCG industry from different departments are approached. Core services currently are opportunity evaluation and investment decision-making, plant and site optimisation, facility design, and CAPEX consulting. Expanding services are program management, process operations consulting, Supply chain assessment and network optimization and strategy development. Main findings during the interviews that align with literature can be divided and discussed in the following main topics: problems and tendencies in the FMCG industry, technological, and socio-cultural related challenges. Findings from the five interviews are summarized in the next sub-paragraphs.

Problems and Tendencies in the FMCG Industry

The expansion of FMCG companies and their activities around the world has resulted in complex supply chain management. FMCG firms' suppliers have their own suppliers and consumers located all over the world. Many businesses are aware of their level one supplies, but are unaware of their level two and three supplies. Large networks contribute to this lack of awareness, making it difficult to identify exactly what is going on and when something has gone wrong. That is, however, how efficiency can be realised. Although information technology can link data and indicate when a link is broken, significant supply chain milestones must be defined and conveyed. This is difficult when working with a significant volume of data because it requires collaboration with numerous stakeholders.

Another issue that arises frequently is disruptions in the supply of raw materials and components, which have a significant economic impact. As previously said, an increasing amount of data becomes available, which can be used to improve inbound operations, for example. However, the amount of data that businesses must deal with grows exponentially. The quantity of data is proportional to the total number of supply chain partners/nodes as well as the types of items generated. The amount multiplies as more products are created. This is less of a problem on the way out. According to two analysts, most businesses deal with fewer customers on the supply side of the plants. Customers as opposed to suppliers

Other major issues raised by experts include misalignment of sales and production, unclear product arrival periods, and retailer pressure. When delivery is late and fees are charged, the latter can be seen, resulting in a hefty cost. Warehouses are also located in numerous cities as a result of

globalisation to cover uncertainties. To increase efficiency, closer collaborations and integrated techniques are required.

Technological Challenges of Supply Chain Visibility

Technologies can assist in the linking of data, the alerting of when a link is broken, the detection of the root cause of a broken link, and the making of judgments based on data rather than experience. When manual communication methods are restricted, technology can help boost communication efficiency. However, not all of the customers and partners for whom the consultants worked had sophisticated data systems for exchanging and receiving information. The amount of data exchanged is also directly proportional to the maturity of the partners' data systems.

The ability to disseminate knowledge on the one hand, and technical aptitude on the other, should both be available. As a result, a proper transition that leads to interpretable data is required. This is thought to be a challenging task. Consultants frequently emphasise that while firms may have sophisticated technical systems, they do not always extract enough value from them.

Socio-Cultural Challenges of Supply Chain Visibility

Aside from technology hurdles, the consultants tackled a slew of social and cultural issues in order to get the proper data and improve supply chain visibility. Because particular data is considered sensitive, it is frequently not shared. Even within organisations, receiving information from a sibling company might be a challenge. Fear of sharing information stems from both external and internal factors, including competition and honour difficulties. Upstream supply chain activities continue to be a source of uncertainty for parties in the supply chain. Information sharing may be beneficial, but it is necessary to find a way for information sharing to interact. Many experts believe that full data insight is unachievable, and that the focus should instead be on the valuable information. At the same time, complete trust in the data received is required in order to derive value from it.

Interview with FMCG Supply Chain Managers

The supply chain managers' experiences have gained insight into the complexity of the supply chain. Also much expertise is available about the supply chain structure, structure, the typical disruptions, and challenges of exchanging information across the supply chain. The following sub-paragraphs will illustrate these topics and discuss the findings of the interviews with FMCG managers.

Supply Chain Structure

The majority of production is done in-house, with just a tiny percentage of activities outsourced to contracted manufacturers. One corporation has totally outsourced its product manufacturing. In some circumstances, warehousing and fulfilment of distribution centre activities, such as storage and handling, are outsourced.

Many supplying companies that are involved in the study, where packages, raw materials, and components are delivered to the manufacturing facilities. On the demand side, several parties are involved in the delivery of finished items to merchants, web stores, professional end users, and small shops. In recent years, e-commerce has risen significantly, as seen by the large number of e-commerce clients that have their own e-commerce warehouses and purchase a fully produced product. Products are frequently sent directly from the plant to significant clients who have placed large orders. A distribution centre is frequently used to coordinate deliveries to smaller businesses. In many circumstances, the distribution centres are near to the plants. The different departments as procurement, planning, customer service, and logistics, are working closely together.

Problems and Tendencies in the FMCG Industry

Typical supply chain disruptions occur across multinational supply chains, and the results of the interviews revealed quite similar perspectives. Inbound, products and raw materials are frequently not delivered on time, resulting in a slew of issues downstream, including the inability to begin production and product unavailability. This can lead to out-of-stocks at warehouses and distribution centres resulting in poor customer service. Various factors can contribute to this failure to produce on schedule, such as supplier disruptions or unforeseen supply issues such as fire or transportation issues.

Stock shortages can also emerge as a result of insufficient demand planning. Misalignment in production planning and the necessity to change production planning on a constant basis originate from an underestimated demand or supply prediction. On the other hand, not only are stockouts common, but so are excessive inventories. These products can no longer be sold, especially when they are frequently updated or when design adaptations occur. For all FMCG companies, finding a balance between the amount of safety stock and excessive inventory is a major challenge.

Other disruptions in the manufacturing facility itself can occur like machinery breakdowns, packing line defects or contamination issues resulting

in delays. If the quality of the raw materials or finished goods does not meet specifications, delays also occur and sometimes result in high lead times and stock outs.

Challenges Key Business Processes

According to supply chain managers, there are challenges to overcome the aforementioned supply chain disruptions. Many variables influence these interruptions, including the ability and willingness to communicate information, trust, organisational culture, and technical challenges. During the conversations with supply chain managers, the complexity and progress made in recent years became obvious. The primary challenges are explored, as well as the areas where there are opportunity.

Forecasting Demand

Supply planning, in the eyes of supply chain managers, is the process of determining how and when commodities will be transferred from the distribution centre to the retailer/shop. The focus of production planning and demand forecasting is on the long term. The latter is accomplished through collaboration between the marketing, sales, and demand planning departments. When promotional events occur or new products are launched, the marketing and sales departments know exactly what products are sold. A forecasting tool based on historical models is used in demand planning.

Because production planning is not flexible enough to adjust to changing demand, an erroneous demand forecast is troublesome. In the event of under-forecasting, inventories are frequently redistributed around the company's countries. When every country systematically underestimates demand, however, powerful countries prioritise products. With insufficient projections, overestimation is also a major issue. When an excessive amount of inventory is built up, it becomes impossible to sell it. This occurs when products are modified as a result of new production lines or designs. It can be difficult to find new uses for these items, and their disposal is not environmentally friendly. In this circumstance, a loss of income is unavoidable. More complex forecasting tools could incorporate more data to solve these challenges.

Production Planning

The demand forecast, as mentioned in the preceding paragraph, poses a significant difficulty for production planning. Because production planning is not flexible enough to adjust to changing demand, an erroneous demand forecast is troublesome. A precise forecast will result in a consistent production with tolerable overproduction and underproduction. The

availability of reliable client forecasts (retailers and stores) as well as their sell-out data could help enhance forecasts. This data is also referred to as Point of Sale data.

Inventory Management

The inventory levels of raw materials, products, or components held by suppliers are uncommonly shared with regard to the management spoken. Because the inflow deals with a variety of material streams and businesses, there is a lot of data to process. The inventory levels of the FMCG company's warehouses and distribution centres are mostly known. The inventory level information of merchants and stores, on the other hand, is vital information for supply chain management that is frequently inadequate. Inventory levels are traditionally replenished when retailers place an order.

About stocks and product availability, the sourcing department, supply planning, and logistics departments are in constant contact. The businesses made use of sophisticated inventory management systems. Slapstick, an inventory optimization software described by the management and utilised as an add-on to the ERP system to create order suggestions automatically, is one software cited by the manager.

Because limited information about inventory levels is available and only the time and quantity of the last order are known, it is difficult for FMCG companies to forecast their customers' orders. When significant orders are placed unexpectedly, anticipation is difficult. This can lead to long lead times and disgruntled consumers.

Because the interviewers do not have complete knowledge of the retailer's inventory, the ongoing trade-off that companies must make is the amount of stock that should be held. High stock levels boost service levels, but they wreak havoc on cash flow. When inventory levels are completely transparent, the ideal stock level may be calculated, resulting in minimal costs while still processing requests on time.

To summarise, inventory data is frequently absent. When information is available, it is frequently updated insufficiently and delivered only once every so often, and it is not always accurate and complete. Concerns about market position deterioration and a lack of trust play a major influence in the dissemination of this information.

Logistics

One of the key challenges faced by FMCG supply chain managers is that disruptions are not always communicated quickly throughout the supply

chain, resulting in lost efficiency. Communication of supplier transport problems is critical for adapting production strategy. However, these interruptions are frequently not conveyed in a timely manner. In this case, one supply chain manager recounted how suppliers and an FMCG firm behaved. If a disruption occurs, the provider prefers to wait as long as possible before informing the customer, as there is a probability that the problem will be resolved in a timely manner. Otherwise, an order will be placed with a different vendor. However, when the disruption is not solved in time, the manufacturer gets this message too late and needs to adapt the production process.

Technological challenges of Supply Chain visibility

Software Systems and Manual Operations

The multinationals all having software solutions to manage business operations and communication and were explained during the interviews. Procurement, production, material management, sales, marketing, finance, and human resources are all covered by Enterprise Resource Planning (ERP) systems (HR). Every FMCG company has an ERP system that organises and integrates several business activities. SAP (Systems, Applications, and Products) is a major provider of ERP software and solutions.

Although order management is largely computerised, one manager mentioned that smaller parties still place orders by mail or fax. In certain circumstances, logistical data interchange, such as volumes to be delivered to warehouses and order volumes, is processed and supplied manually via Excell files rather than being pulled from the ERP system. Sell-out data, changes in product catalogues, and transportation interruptions are some of the other sorts of information that are manually communicated. In an ideal world, all data streams would be merged into a single system. Customer support teams engage with 3PL partners in terms of transportation, and logistic service providers.

Data Formats and Master Data

All of the supply chain managers interviewed believe that technical limitations are the main cause for information exchange being hampered. Customers' and suppliers' technical systems for processing and sending information are frequently insufficiently developed. As a result, data sharing is hampered by the professionalism of consumers and suppliers. Information is manually processed in some warehouses. To manually transfer information, many formats and tools (Excel, SNG, etc.) are frequently utilised. This makes it time consuming to understand and compile the data from multiple sources into a single format. A standard format is occasionally sent in which the information is preferred to receive, but it is rarely used.

The master data is not effectively organised, which is a major underlying issue that supply chain managers solve. This makes data comparison difficult. The source data and the base unit of measurement are the master data. This master data is critical for comparing and utilising information from various parties and departments along the chain. This is a difficulty that today's huge corporations face. The problem is that, because master data is present throughout the supply chain, no one feels responsible for it. It takes years for teams of experts and consultants to clean up this master data, and it's usually rather costly.

Technological Advancements

In terms of the five supply chain managers, several technologies may be promising to implement in the FMCG industry. Because of the RFID tags connected to products, radio-frequency identification (RFID) as a technique can store and read information from a distance. This can save time because when utilising RFID, not every product on a pallet needs to be scanned individually; instead, when a pallet passes through an RFID gate, all of the products on the pallet can be scanned at once and registered in the inventory system. RFID can save time, but it is also expensive, hence it is not frequently used.

Socio-Cultural Challenges

Trust

All of the supply chain managers stressed the importance of trust in the success of information sharing. Looking into retailers' willingness to disclose inventory information is one example of where this trust issue can be seen. In both good and poor economic times, sharing this information can impact commercial discussions by ensuring that all data are known. Additionally, businesses collaborate with a number of shops, all of which are rivals. If information is shared, trust is required to ensure that the data is used safely. In the contracting phase, suppliers are not only selected based on prices but also on their reputation and reliability.

Business Culture

Different business cultures are affecting the willingness to share data and information. A supply chain manager provides an example of when this disparity was obvious throughout formal processes as force majeure. In the event of an extraordinary incident, force majeure releases parties from liability or obligation. A supplier is not required by law to divulge the volume that can still be delivered, and German enterprises strictly adhere to this norm. American and Asian corporations, on the other hand, communicate

information far more easily and adhere to fewer norms and rules. This is just one example, but organisational culture has an impact on a wide range of scenarios, including communication and willingness to share information.

Contract Negotiations

When two parties are negotiating a contract, it's critical to keep track of the minimum and maximum information that should be given. The importance of emphasising and proving the benefits of information exchange is critical. This isn't always easy, though. Furthermore, data cannot always be transmitted instantly. To process this, new IT systems are sometimes required. The costs of this investment can be discussed during negotiations, but it is a difficult issue to broach. The amount of information shared by an FMCG firm with its stakeholders is also determined by the size and exact power position of retailers and outlets. Powerful retailers also have their own requirements like certain delivery terms, delivery conditions and updates in catalogues that need to be exchanged at certain intervals.

Findings

- All the respondents felt that supply chain management is important from a strategic point of view.
- Majority, i.e. 74% of them felt that right kind of people are positioned in the right places.
- Majority of the respondents, equivalent to 47% feel that supply chain effective and optimized.
- 89% of the respondents find that the level supply chain quality in terms of ingenuity engineering is sufficient.
- 94% of the respondents feel that supply chain has developed over the past decade.
- 100% of the respondents feel that there is a need to increase the visibility of supply chain in FMCG industry.
- Majority of the respondents feel that all the three quality, quantity, and brand name are responsible for a product to be successful.
- 77% of the respondents believe that we are using the right metrics and incentives
- Majority of the respondents i.e. 65% felt that damaged food, late delivery, customer dissatisfaction are major risks due to improper supply chain management.

The research focussed on the state-of-the-art of coordinating FMCG supply chains and the challenges impeding supply chain visibility. The key obstacles, according to interviewees, are developing accurate plans and projections, having greater insights into product availability in warehouses, and having real-time insights into sell-out data. Receiving insights into customer and supplier inventory levels, developing proactive disruption communication, and having real-time truck information are all difficult tasks. Simultaneously, it is critical that the data exchanged and received is accurate, current, and detailed. Another technical problem is integrating several systems to collect and send this information. In order to maximise productivity, master data must be clean, and information should be received in the same forms.

Finally, in order to enhance the volume of data transferred, trust must be established, and proofs of ideas regarding the benefits of data exchange for numerous parties must be provided. Finally, increased visibility can aid in the creation of transparency and the identification of root causes of problems. This answers the research question questions add up and provide valuable information about the issue statement of improving supply chain visibility in the FMCG industry.

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Chapter - 3

The Impact of Social Media on Consumer Decision on Fmcg Products

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Abstract

This study aims to examine the influence of social media on customers' decision-making processes regarding FMCG products. Marketing is one of the most potent techniques and strategies in the world of all sorts of advertising and is of utmost importance. Social networking is a relatively new promotional channel. In recent years, social media has rapidly risen in popularity among the general public, and it is highly probable that it will soon surpass all other marketing functions. Because of social media, conventional marketing communication is evolving. Consumers are increasingly turning to social media rather than traditional media such as television, periodicals, and radio for information. The primary objective of the study is to identify and comprehend the most influential aspects of social media advertising on customer buy intent. In order to gain a quantitative understanding of the industry, the purpose of this research was to conduct an empirical study on the motivations of online shoppers. A person's purchasing intentions are their intent to acquire a particular brand. Purchase intent is a crucial factor to consider when assessing customer behaviour. This study's objective is to investigate the elements that influence customers' purchase intentions in relation to social media marketing, as well as the effect of their attitudes on their social media usage patterns.

Keywords: Social media, consumer decision, online buying, consumer purchase

1. Introduction

Consumer-packaged products are another name for fast-moving

consumer goods (FMCG). This category comprises all regularly purchased consumables that are not foods or pulses. Among the most prevalent things on the list are toilet soaps, detergents, shampoos, toothpaste, shaving products, shoe polish, prepared dinners, and household accessories. These items offer a high rate of return and are designed for everyday or frequent use. FMCG is the fourth largest economic sector in India. The Fast-Moving Consumer Goods Industry encompasses both food and non-food common consumer items. They are frequently obtained as a result of a small-scale customer decision; thus, producers market their advertising and promotion fiercely. These things are typically obtained at grocery stores, supermarkets, and hypermarkets, among other locations. Fast-moving consumer goods (FMCG), commonly referred to as consumer-packaged goods (CPG), are inexpensive products with a fast turnover rate. Despite the fact that the absolute profit on FMCG items is minimal, they are frequently sold in large quantities, thus their cumulative profit can be enormous. Further, this industry will expand as a result of the growing demand for FMCG products in rural and semi-urban areas, which will need manufacturers to concentrate more on larger sales quantities. India's rural and urban marketplaces offer numerous opportunities for corporations to enter and operate profitably. India has become an important market for a vast array of goods and services, including financial services, fast-moving consumer goods (FMCG), healthcare, and telecommunications. Rural markets are just as vital as urban markets in today's competitive environment for marketers. Fast-Moving Consumer Goods firms confront severe competition for their products, compelling them to create innovative methods of making money (Vibhuti and Pandey, 2014).

According to Brand Equity survey research, by the end of 2020, about \$45 billion worth of the FMCG industry's consumption in India will be digitally driven. Multiple studies, including a 2015 report by BCG, have predicted that the rapid adoption of the internet by consumers, the proliferation of smart devices, and the rise in digital media consumption will result in a revolutionary shift in the FMCG business. Brands engage with their audiences to acquire new customers and maintain the loyalty of existing ones. When it comes to social media, community participation and engagement are crucial. Specifically, the purpose of this paper is to obtain a knowledge of how FMCG companies may use social media to establish client trust while simultaneously connecting with them online.

Social media has provided FMCG companies with a platform for rapidly contacting customers in a number of geographic regions. As a result of their online connectivity and engagement, organisations will be able to establish

customer loyalty. Due to the high levels of communication and participation, this will have far-reaching effects on the global economy. Due to the democratisation of information, consumers now have more access to information. Consequently, social media is rapidly gaining popularity. This has led to the establishment of a platform economy on social media platforms. As old advertising methods are disrupted and new virtual ecosystems emerge, the future of marketing expenditures and investments will increasingly be determined by these ecosystems. As companies attempt to maximise their marketing budgets, social media is developing as a low-cost alternative with a large reach that is gaining popularity. This is causing the rise of new digital business models with specialised monetization, such as 99 acres, Amazon, Flipkart, Big Basket, PayTm, PhonePe, and other like platforms.

Diverse businesses, from consumer durables to fast-moving consumer goods, are increasingly using online marketing strategies. Online marketing has influenced the fast-moving consumer goods (FMCG) purchasing decisions of consumers. Before purchasing a product, individuals obtain information from the internet, analyse it, read customer reviews, and conduct comparisons. It is vital to monitor the outcomes of a company's social media operations in order to assess the brand's and marketing communication's influence on social media. Social Media Analytics is essential for determining the efficacy of a company's social media efforts and campaigns.

The consumer decision-making process may appear to be complex, yet all consumers go through the same fundamental steps when making a purchase to determine which products and services best fulfil their needs. Consumers make decisions regarding the selection, purchasing, and utilisation of products and services on an ongoing basis. Consumers are frequently faced with a plethora of options that are constantly evolving as a result of new technologies and intense competition. There is often a multitude of information available from several sources, including advertisements, packaging, brochures, salespeople, and friends.

Hence, the use of social media facilitates relationships between industry executives and consumers. This link has evolved as a result of the emergence of social media. Social media has the capability of influencing consumer behaviour. Therefore, the sector should adopt marketing tactics aimed at fostering positive consumer relationships.

2. Literature Review:

According to studies by Voramontri and Klieb (2019), buyers use social media to locate products and make purchases. Primarily due to the cost

savings, ease, and information. Social networking is used by consumers to shop and learn. The quality of internet reviews influences brand recognition and purchase intent. Chivandi et al. (2019) claims that social networking sites such as Facebook, YouTube, and Twitter helped businesses enhance brand visibility and recognition. Customers provided feedback on existing brands and new products, enabling businesses to strengthen their offers. It was determined that social media, friends, family, and acquaintances influence an individual's purchasing behaviour. According to the survey, India has always been a growing market for social media networks due to the large number of Internet users. As a result, there has been an upsurge in the number of Indians who shop online. Customers' purchasing practises have historically changed (Dey et al., 2017).

Brand loyalty appears to be a crucial factor in protecting businesses. That they rank higher than competitors in online consumer reviews. If brand loyalty is based on emotional attachment as opposed to rational conviction (Kostyra et al., 2016). Further, the main objective of social media is to facilitate communication and information gathering. Prior to making a final choice, customers evaluate several alternatives, combine facts, and appraise (Jothi & Gaffoor, 2017). Hines (2017) posited in their research that establishing customer relationships and product confidence increases brand recognition. Brands create their own content marketing programmes in order to evaluate social media brand awareness, including social media reach, brand mentions, blog shares, and search traffic.

Research Gap

Adolescent use of social media has become quite prevalent in contemporary culture. The increase in social media usage has provided businesses with an opportunity to direct marketing efforts, but it has also posed a challenge in finding the most effective technique for reaching customers. The challenge with this increase in social media activity is that the vast majority of those who use it for news and product or business reviews have the capacity to positively or negatively affect a company's reputation and profitability. This type of action is currently hurting business operations. According to studies (Edosomwan, 2011 and Taneja, 2014), businesses that participate in social media can assist in establishing consumer loyalty, preventing social media attacks, and, most importantly, dramatically improving FMCG product earnings. Given the increasing prevalence of social media, it appears that businesses must adapt in order to thrive in the twenty-first century, despite the paucity of research on the subject.

3. Research Methodology

The study used descriptive research design. Simple random procedure is used to collect the data. Developed a questionnaire survey for data collection and collected the data in Bangalore urban region. The following study is to analyze and determine impact of social media on consumer decision on FMCG products

4. **Sample size:** A sample of 102 respondents are taken to undergo the survey. The demographic data includes students, employees, businessmen, housewife and entrepreneurs etc., of different age groups.
5. **Scope of Study:** The scope of the study is to examine use of social media by university students and to study its impact on social media on consumer decision on FMCG Products. And how it is improving the online shopping patterns, and behaviors in Social Media in India.
6. **Need of The Study:** The need of this thesis is to clarify the understand the role of social media on consumer decision process in FMCG sector.
7. **Objective Of The Study**

1. To understand the social media consumer decision process
2. Influence of social media on decision-making process online buying product
3. To analyse how social media platforms, influence consumer decision making

8. Method Of Survey

Structured questionnaire created in google form and collected the data

9. **Research Approach:** Percentage analysis was used to analyse data obtained. Descriptive analysis was used to interpret results.

10. Data Analysis

The data analysis found that 78.4 percent people strongly agree to purchase the product with influence of social media and 5 percent of the people disagree with this. Thus, social media usage is increasing exponentially, and this platform is taking over the marketing industry and changing marketing approaches. Whenever a new product is presented, the majority of businesses rely only on social media for client acquisition, which is easier and less expensive than erecting large billboards. This allows businesses to target a greater number of clients from various parts of the world at a lower cost than traditional methods. Therefore, it is evident that social media is the best place to create product awareness or brand equity.

11. Findings, Suggestions & Limitations

According to the findings of the most recent research, there are numerous studies on branding and social media. We found a dearth of research on social media marketing and investment within this industry. According to these perspectives, this research article is ground-breaking because there is scant research on social media in the United States and none on its relationship with brand positioning and brand equity. Two hypotheses were developed and examined to overcome this research gap. People are embracing social media as a venue to ask questions about any product or service, according to our findings. They found it to be a simple means of communicating with marketing professionals from various organisations and with other consumers of the same products. We also found that social media has a significant impact on brand equity and brand positioning. Increasingly, consumers rely on social media to learn about product characteristics, discounts, prices, offers from competing items, new brands, product quality and performance, market trends, etc. Although brand loyalty cannot be achieved by social media marketing, this study demonstrates that social media may be utilised as a platform to develop brand awareness, association, and emotional attachment, which can ultimately increase brand equity by establishing a strong brand position. This study aims to increase corporate organisation decision-makers' understanding of social media investment. Considering a larger population, additional study may be conducted on enterprises' social media investments, their impact on sales and profitability, and the influence of social media on sales.

Currently, social media is extremely prevalent in society, and individuals are extremely involved in social networking. On social media, individuals interact with one another. It is the use of social networking on a digital platform. They are sharing their experience with networking and its necessity. On the social networking side, information, education, marketing, and entertainment are all readily available. Consequently, social media has become flexible. In Indian society, WhatsApp, Twitter, Instagram, Facebook, and LinkedIn are very prevalent. The number of users on these networks is rapidly increasing. This is a really encouraging sign for the marketing firm. Similarly, the FMCG industry does not avoid social networking. Consumers are rapidly adopting these patterns and enjoying the usage of technology.

The major suggestions of the research are Facebook and YouTube are the social media platforms that the majority of respondents utilise the most. Therefore, FMCG marketers should pay greater attention to using these platforms efficiently. On Instagram and LinkedIn, customers visit seldom, therefore marketers may take steps to increase this frequency.

This study, like numerous other studies, has drawbacks. During the data collecting and analysis phase, numerous hurdles were encountered. Initially, the available time and resources for data collection were severely constrained. Even though they were meticulously collected to include responses from individuals of diverse ages and geographic locations. This will aid in gaining a broad understanding of the impact of social media on consumer behaviour in India. Furthermore, this study focuses exclusively on FMCG products and social media, which compromises the conclusions once further. Despite these limitations, the current study provides an adequate and considerable foundation for future academic research on the impact of social media on FMCG consumer decisions.

12. Conclusion:

Although it is still in its infancy in India, social media marketing is rising tremendously rapidly and possesses enormous promise. People have embraced social media and technology to the extent that smart phones, laptops, tablets, and desktop computers are commonplace. Typically, marketers are concerned in attracting the attention of consumers. Age, gender, and wealth were found to have an impact on online purchasing preferences, with younger males with higher household incomes being more likely to engage in Internet shopping. Social media marketers must be dependable and protect adolescents from all of the dangers they may encounter when shopping online. Marketers may quickly target adolescent clients via Twitter and Facebook.

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Chapter - 4

Policies to Strengthen Agri Food Supply Chain in Karnataka

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Abstract

This research is about “Policies to strengthen the Agri good food supply chain in Karnataka”. The food supply chain is a series of links and inter-dependencies, from farms to food consumers’ plates, embracing a wide range of disciplines. Food Supply Chain Management brings together the most important of these disciplines and aims to provide an understanding of the chain, to support those who manage parts of the chain and to enhance the development of research activities in the discipline. Food Supply Chain Management follows a ‘farm to fork’ structure. Each chapter starts with aims and an introduction and concludes with study questions that students in particular will find useful. Topics covered include the food consumer, perceived risk and product safety, procurement, livestock systems and crop production, food manufacture, retailing, wholesaling and catering.

Special consideration is also given to supermarket supply networks, third party logistics, temperature-controlled supply chains, organic foods and the US food supply chain. A final chapter looks at the future for food supply chain management.

Keywords: Supply chain, Policies, wholesaling.

Introduction

A food supply chain or food system refers to the processes that describe how food from a farm ends up on our tables. The processes include production, processing, distribution, consumption and disposal. The food we eat reaches us via food supply chains through which food moves systematically in domino-like motion from producers to consumers while the money consumers pay for food goes to people who work at various stages

along the food supply chain in the reverse direction. Every step of the supply chain requires human and/or natural resources. Because a food supply chain is domino-like, when one part of the food supply chain is affected, the whole food supply chain is affected, which is often manifested through changes in price.

In the food supply chain, food moves from producer to consumer via the processes of production, processing, distribution, retailing and consumption; thus, food moves from farmer to consumer in a domino-like fashion. At the same time, money that consumers pay for food moves from consumers to producers in the reverse process, again in a domino-like fashion from consumer to retailer to distributor to processor to farmer.

Thus, the two-sided causality that connects farmers and consumers is mediated by these two sets of domino causalities.

In addition, both movements of food and money are facilitated by “pulls” and “pushes.” In a food supply chain, producers and processors push or supply food and consumers pull or demand food thereby facilitating the dominoes (food) to fall (move) towards the consumers. Similarly, producers.

The good food supply chain—places where we believe capital investments can yield both compelling investment returns and meaningful impact in expanding the supply of good food. We’ve also packaged these opportunities into a platform we’re calling “On the Road to Good Food,” and in a brief report, “Investing.”

COVID-19 is upending the food supply chain. Thousands of workers have been infected. Businesses have shut down. Supplies of meats and other labor-intensive foods are tightening, while a surplus of perishable milk and crops has been dumped or left in fields to rot. This is a nightmare for farmers, workers and consumers. Meanwhile, farmers and food providers are working tirelessly and making profound sacrifices to keep Americans and the world fed — often without sufficient personal protective equipment, healthcare or paid sick leave.

Everyone has a stake in keeping the food supply chain intact, with the expectation that health remains the top priority. But it’s become increasingly clear that we can’t return to business as usual once the pandemic eases. We need a more resilient food supply chain that can quickly adapt and prosper, even during major disruptions.

Here are three ways policymakers and corporate leaders can help to rebuild a more resilient agriculture and food system.

Supply chain resilience can be strengthened by increasing inventory levels of raw material, work-in-progress, and the final product; adding manufacturing and/or storage capacity to improve manufacturing surge capability; and increasing the number and ensuring the surge capability of suppliers of key materials or work

More and more companies across industries are looking outside of traditional warehouse and transportation metrics and incorporating real-time visibility and customer satisfaction into their performance management. This approach enables anticipation of performance disruptions with business intelligence and analytics driving decisions making. Not only are companies looking at new ways to address performance, they are also looking at new ways to collaborate to further reduce cost and share in excess capacity with trusted partners. Collaboration is not only vital for best in class but also survival in the marketplace for those leaders in logistics.

A great supply chain brings predictable, on-time performance, at the lowest cost.

A great supply chain starts with the right people. A well-functioning operation needs employees who fit the team culture and managers who help them grow.

The characteristics of a good supply chain are visibility, optimization, having the lowest cost possible, timeliness, and consistency.

Great supply chains integrate the expertise of multiple qualified suppliers who safely and consistently fulfill expectations; display quantifiable customer value with meaningful, accurate metrics; and actively support profitable, sustainable growth.

A great supply chain has senior-level sponsorship that enables success throughout the process; a collaborative mentality that flattens the buyer/supplier relationship into a mutual-win one; and agreement on measurable processes.

A truly great supply chain balances rigidity and flexibility. Rigidity provides the backbone of service quality, predictability, resilience, and cost control. Flexibility allows you to anticipate and meet your changing client, vendor, and market needs.

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Developing the infrastructure to supply good food will require more than philanthropy alone can deliver. Most of the solutions we need must come from private-sector commitments—specifically, from investments in companies across the food supply chain that can bring more sustainable, healthy, and affordable food to market.

Current crop and protein production too often delivers unhealthy food options for consumers. Without convenient and affordable access to good food, Americans often rely on substitutes that are far less nutritious. This contributes to disastrous health issues, including the epidemic that has left one in three American adults obese. Consumers’ tastes are changing. Demand for organic products jumped 11 percent in 2015 and now accounts for \$39 billion, or five percent of total US food sales. Meanwhile, innovators continue to pursue new technologies with the potential to disrupt the food sector.

Literature Review

Sr. No.	Literature Review	Author
1	Cold chain cooked with different water contents: retarted starch digestion by refrigeration, international journal of biological molecules.	Dingbang li, Zhuoting Zhao, Binjia Zhang, Lili Wang, 2021.12.066,199
2	Microwave reheating enriches resistant starch in cold chain cooked rice: A view of structural alternations during digestion, International journal of biological Macromolecules.	Zihang Cheng, Jiangnan Li, Dongling Qiao, Lili Wang, Siming Zhao. 2022.03.034,208
3	An optimal freshness-keeping effort model for fresh produce with constraints of special funds, journal of industrial and management optimization	Bing Zhou, Yufeng Li. 10.3934/jimo.2021215,(0)
4	One belt one road influence on perishable food supply chain robustness, Environment, Development and Sustainability	Hasnain Abbas, Lindu Zhao, Narmeen Faiz, Hafeez Ullah, Jianxia Gong, Weiying Jiang, 10.1007/s10668-021- 01833-y
5	Diagnosing the service quality of perishable food logistics: temperature-sensitive milk delivery, Asia pacific journal of marketing and logistics.	Pei-Ju, Liang-Tay Lin, Chi-Chang Huang. 10.1108/APJML-04-0201
6	Pricing and safety investment decisions in food supply chains with government subsidy, journal of food quality.	Yanan Yu, Yong he, Mellisza Salling. 10.1155/2021/6616096,202,(1-18),(2021)

7	Using blockchain technology to drive operational excellence in perishable food supply chains during outbreaks, The international journal of Logistics management,	Yasanur Kayikci, Damla Durak Usar, Batin Latif Aylak, 10.1108/IJLM-01-2021-0027,(2021)
8	Using evolutionary game theory to study governments and logistics companies, strategies for avoiding broken cold chains, annals operations research	Xiao-Hu Xing, Zhi-Hua Hu, Wen-Ping Luo, 10.1007/s10479- 019-03368-y,(2019).
9	Price and cold chain service decisions versus integration in a fresh agri-product supply chain with competing retailers, Annals of operations research	Yunlong Yu, Tiaojun Xiao, Zhangwei Feng 10.1007/itor.12618,26,4,(1576-1605)
10	Coordination of a two echelon supply chain in presence of market segmentation, credit payment, and quantity discount policies, international transactions in operational research.	Ata Allah Teleizadeh, Naghmeh Rabiei, Mahsa Noori-Daryan 10.1111/itor.12618,26,4,(1576-1605),(2018)
11	Using evolutionary game theory to study governments and logistics companies, strategies for avoiding broken cold chains, annals operations research	Yasanur Kayikci, Damla Durak Usar, Batin Latif Aylak, 10.1108/IJLM-01-2021-0027,(2021)
12	Because of several studies completed by this author, the researcher claims that electronic word of mouth is more appropriate than conventional word of mouth	(B. N. Malar Selvi, J.Edwin Thomson 2016)
13	Microwave reheating enriches resistant starch in cold chain cooked rice: A view of structural alternations during digestion, International journal of biological Macromolecules.	Dingbang li, Zhuoting Zhao, Binjia Zhang, Lili Wang, 2021.12.066,199
14	Pricing and safety investment decisions in food supply chains with government subsidy, journal of food quality.	Pei-Ju, Liang-Tay Lin, Chi-Chang Huang. 10.1108/APJML-04-0201
15	Using blockchain technology to drive operational excellence in perishable food supply chains during outbreaks, The international journal of Logistics management,	Bing Zhou, Yufeng Li. 10.3934/jimo.2021215,(0)

16	Researcher says that gratifications gained through social media have a big impact on consumer engagement. If a customer likes a brand, gets extra incentives, and has access to important information, they may be more likely to participate. A lot of other studies have looked at consumer pleasure as a big factor in how people use social media and how much they like it.	Yunlong Yu, Tiaojun Xiao, Zhangwei Feng 10.1007/itor.12618,26,4,(1576-1605)
17	Investment decision and coordination of green agri- food supply chain considering information service based on blockchain and big data	Pan Liu, Yue Long, Hai-Cao song, Yan-Dong He 277,123646,2020
18	Price and cold chain service decisions versus integration in a fresh agri-product supply chain with competing retailers, Annals of operations research	Yunlong Yu, Tiaojun Xiao, Zhangwei Feng 10.1007/itor.12618,26,4,(1576-1605)
19	Coordination of a two-echelon supply chain in presence of market segmentation, credit payment, and quantity discount policies, international transactions in operational research.	Ata Allah Teleizadeh, Naghmeh Rabiei, Mahsa Noori-Daryan 10.1111/itor.12618,26,4,(1576-1605),(2018)
20	An optimal freshness-keeping effort model for fresh produce with constraints of special funds, journal of industrial and management optimization	Yunlong Yu, Tiaojun Xiao, Zhangwei Feng 10.1007/itor.12618,26,4,(1576-1605)
21	Diagnosing the service quality of perishable food logistics: temperature-sensitive milk delivery, Asia pacific journal of marketing and logistics.	Hasnain Abbas, Lindu Zhao, Narmeen Faiz, Hafeez Ullah, Jianxia Gong, Weiying Jiang, 10.1007/s10668-021-01833-y
22	Cold chain cooked with different water contents: retarded starch digestion by refrigeration, international journal of biological molecules	Dingbang li, Zhuoting Zhao, Binjia Zhang, Lili Wang, 2021.12.066,199

Research Design

Methodology:

In the food supply chain, food moves from producer to consumer via the processes of production, processing, distribution, retailing and consumption; thus, food moves from farmer to consumer in a domino-like fashion.

The methodology was based on the conceptual model of Supply Chain Management proposed by Cooper, Lambert and Pagh (Cooper et al. 1997), and on SCM initiatives & practices. It involves eleven analysis referential axis established from key business processes, SCM horizontal structure and initiatives & practices.

Sample:

A supplier grows and harvests a crop of wheat, then a processor turns the wheat into flour after that the flour goes to food manufacturer where it is combined with foodstuffs from other processor to make cereals, breads, pastas, and other food products. And the products are sent to a distributor who manages the logistics transportation of the products to various retailers. Finally retailers then sell the food products to end.

Tool:

These are among the most important supply chain management tools.

- 1. Shipping status tools
- 2. Order purchasing tools
- 3. Lean inventory tools
- 4. Warehouse management tools
- 5. Supplier management tools
- 6. Demand forecasting tools
- 7. Analytics and report tools
- 8. Security feature tools

Research Objective:

The objectives of this research are knowing whether there is any food shortages in this process.

Keeping customer satisfaction in the mind, I have checked weather the price of the product is reasonable or not.

Analysis and Interpretation

Table 4.1: Gender

Gender	No. of response	No. of response percentage
Male	44	77.3%
Female	10	22.7%
Others	0	0%
Total	44	100%

According to the above table we can analyze that the no. of responses are 44 out of 44 Male are 34 and female are 10.

The percentage of male is 77.3%, the percentage of female is 22.7%.

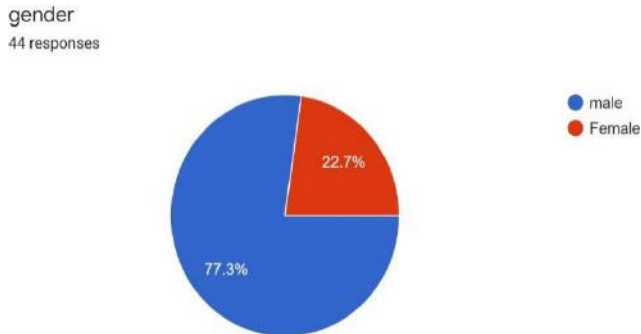


Table 4.2: Age group of the members.

	No. of responses	No of responses in percentage (%)
<18	2	4.5%
18-25	42	95.5%
25-35	0%	0%
Total	44	100%

According to the above table, the people aged less than 18 are 2, people aged 18-25 are 42

The percentage of the people aged <18 is 4.5%, percentage of the people aged 18-25 is 95.5%

Table 4.3: Will there be any food shortages

	No .of responses	No .of responses Percentage (%)
Yes	29	67.4%
No	7	16.3%
Maybe	7	16.3%
Total	44	100%

According to the above table we can analyze the no. of responses are 19 from that, the people saying yes is 15, no is 2, and the people who said maybe are 2.

The percentage of yes is 73.7%, percentage of no is 21.1%, and maybe is 2%.

will there be food shortages
43 responses

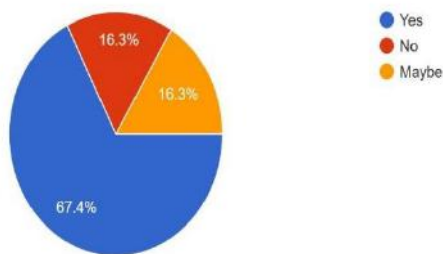


Table 4.4: Did covid 19 affect availability or prices of food products in our country.

	No. of responses	No. of responses in percentage (%)
Yes	34	79.1%
No	8	18.6%
Maybe	1	2.3%
Total	44	100%

According to the above table the no. of responses are 44. In that 44, people telling yes are 34, no are 8 and maybe is 1.

The percentage of yes is 78.9%, percentage of no is 4.5%, and percentage of maybe is 15.8%.

did covid 19 affect availability or prices of food products in our country
43 responses

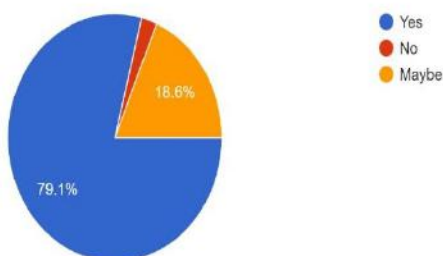


Table 4.5: What is the quality of food you maintain?

	No. of responses	No. of responses in percentage (%)
Premium	14	33.3
Best	18	42.9
Good	10	23.8
Total	44	100%

According to the above table the people, the quality of food the people use is premium 14, best 18, and good 10

In percentage is premium 33.3%, best 42.9%, good 10%.

what is the quality of food you maintain
42 responses

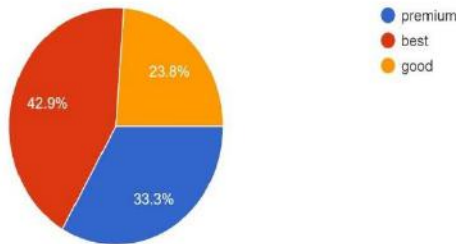


Table 4.6: Scarcity of food grew more and more during the covid times

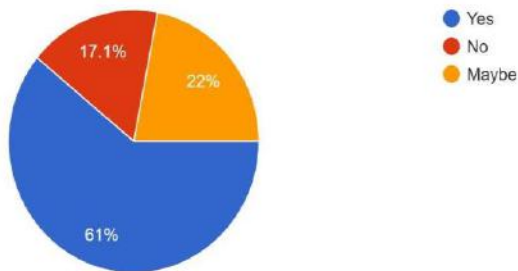
According to the below table the responses are 44, yes is 14, no is 3, maybe is 5

The percentage of yes is 63.3%, percentage of no is 13.6%, and percentage of maybe is 22.7%.

Table 4.7: Due to covid 19 the supply chain industry incurred loss.

	No. of Responses	No. of Responses in Percentage (%)
Yes	25	61%
No	7	17.1%
Maybe	9	22%
Total	44	100%

scarcity of food grew more and more in covid times
41 responses



According to the above table, the people telling yes are 15, people telling no are 2, maybe is 2.

According to the above table, the percentage of people telling yes is 73.3%, people telling no are 15.5%, and maybe is 15.8%
 due to covid 19 the supply chain industry incurred loss
 42 responses

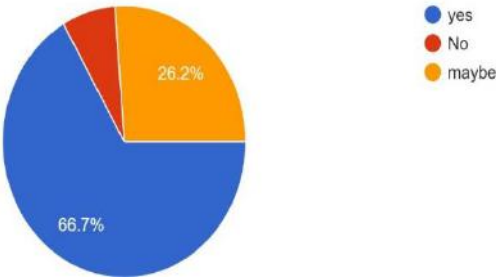
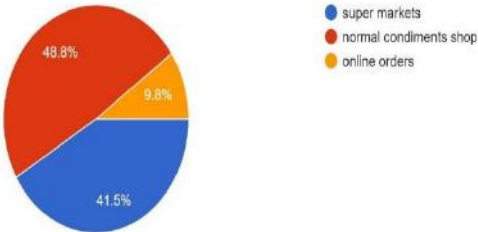


Table 4.8: Where do you prefer to purchase the foodstuff?

	No. of responses	No. of responses in percentage (%)
Yes	28	66.7%
No	3	7.1%
Maybe	11	26.2%
Total	44	100%

where do you prefer to purchase the foodstuff
 41 responses



According to the above table, the no. of people purchasing from super markets are17, people purchasing from condiments shop are 20, online purchases are 4.
 The percentage of people purchasing from super markets are 41.5%, purchasing from condiments shop are 48.8%, purchasing from online is 9.8%

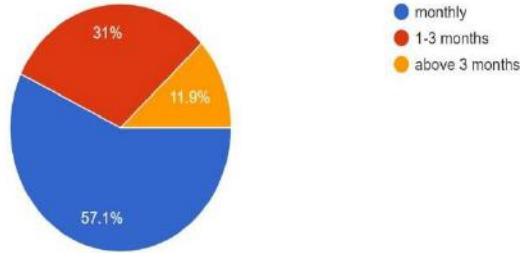
Table 4.9: How often do you place order?

	No. of responses	No. Of Responses In Percentage (%)
Super markets	17	41.5%

Condiments shop	20	48.8%
Online orders	4	9.8%
	41	100%

how often do you place order

42 responses



According to the above table the no. of people ordering monthly are 24, people ordering 1-3 months are 13, people ordering above 3 months are 5

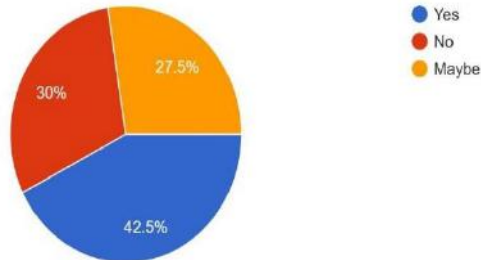
The percentage of people ordering monthly are 57.1%, people ordering 1-3 months are 31%, the people ordering above 3 months are 11.9%

Table 4.10: Does manufacturing goods sold before delivery

	No. of responses	No. of responses in percentage(%)
Monthly	24	57.1%
1-3 months	13	31%
Above 3 months	5	11.9%
	42	100%

does manufactured goods sold before expiry

40 responses

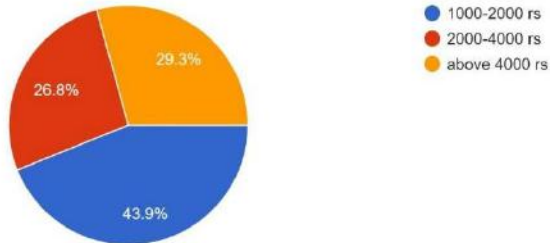


According to the above table the no. of people telling yes are 17, people telling no are 12, the people telling maybe are 11. The percentage of people telling yes are 42.5%, the percentage of people telling no are 30%, the percentage of people telling maybe are 27.5%

Table 4.11: Average expenditure from a customer

	No. of responses	No. of responses In percentage (%)
Yes	17	42.5%
No	12	30%
Maybe	11	27.5%
Total	40	100%

average expenditure from a customer
41 responses



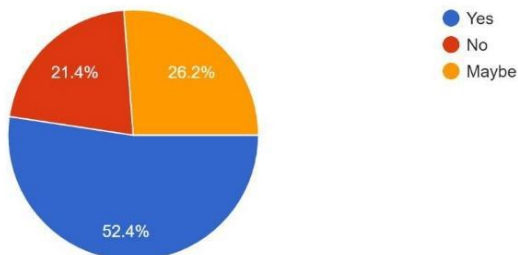
According to the above analysis the expenditure between 1000-2000 rs is 18, expenditure between 2000-4000 is 11, and expenditure above 4000 is 10.

The percentage between 1000-2000 is 43.9%, percentage between 2000-4000 is 26.8%, and expenditure above 4000 is 29.3%.

Table 4.12: Is There Any Seasonal Effect on This Business.

	No. of responses	No. of Responses in Percentage (%)
1000-2000	18	43.9%
2000-4000	11	26.8%
>4000	10	29.3%
Total	41	100%

is there any seasonal effect on this business
42 responses

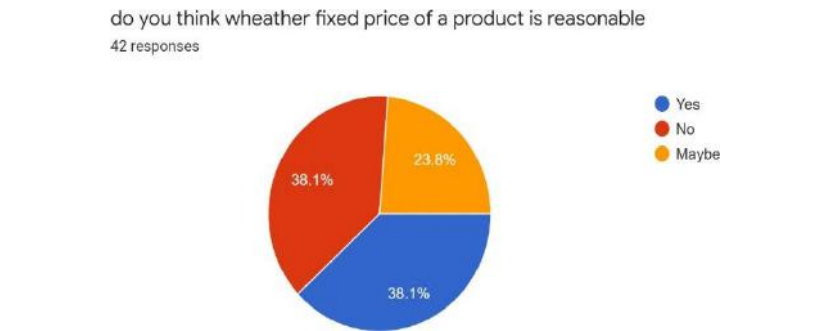


According to the above analysis, people saying yes are 22, people saying no are 9, people saying maybe is 11.

The percentage of people saying yes is 52.4%, percentage pf people saying no is 21.4%, percentage of people saying maybe is 26.2%.

Table 4.13: Do You Think Wheather Fixed Price of a Product is Reasonable.

	No. of responses	No. of Responses in Percentage
Yes	22	52.4%
No	9	21.4%
Maybe	11	26.2%
Total	42	100%



According to the above table the people saying yes is 16, people saying no is 16, people saying maybe is 10.

The percentage of people saying yes is 38.1%, percentage of people saying no is 38.1%, and percentage of people saying maybe is 23.8%.

	No. of Responses	No. of Responses in Percentage (%)
Yes	16	38.1%
No	16	38.1%
Maybe	10	23.8%
Total	42	100%

Statistical Analysis:

Percentage analysis was used to analyze data obtained.

Descriptive analysis was used to interpret results.

Summary and Findings

The food industry has become more customer-oriented and needs faster

response times to deal with food scandals and incidents. Good traceability systems helped to minimize the production and distribution of unsafe or poor quality products, thereby minimizing the potential for bad publicity, liability, and recalls. The current food labelling system cannot guarantee that the food is authentic, good quality and safe. Therefore, traceability is applied as a tool to assist in the assurance of food safety and quality as well as to achieve consumer confidence. This paper presents comprehensive information about traceability with regards to safety and quality in the food supply chain.

Food Supply Chain Management and Logistics provides an accessible and essential guide to food supply chain management, considering the food supply chain from 'farm to fork'.

Food Supply Chain Management and Logistics covers essential topics in food supply chain management, including: food supply chain production and manufacturing; food logistics; food regulation, safety and quality; food sourcing; food retailing; risk management; food innovation; technology trends; food sector and economic regeneration; challenges in International food supply chains; triple bottom-line trends in the food sector; food security and future challenges

Limitations

Regional food systems and organic agriculture are both considered more sustainable than the conventional, globalized food system they provide an alternative to. The emergence and expansion of alternative forms of food supply are influenced by various factors on different scales. Using the food systems approach we aim to study potentials and limitations of regional organic food supply in the Berlin metropolitan region (BMR). Based on the literature, we developed an analytical framework and identified determinants of regional organic food provision along the three major levels of the supply chain: agricultural production, food chain organization, and consumption.

Conclusion

As the increasing awareness of food quality, safety, and freshness, FSCM is facing ever pressure to meet these requirements. How to upgrade and transform current FSCM to suit the ever-increasing demands in the future? This paper presents a state-of-the-art review in FSCM from systems, implementations, and worldwide movements. Current challenges and future perspectives from supply chain network structure, data collection, decision-making models, and implementations are highlighted.

One of the most important issues facing consumers today is the origin of

the foods and food-related products they consume, as a consequence of many food scares and the globalization of food markets, which has led to food mobility across countries and continents. Complexity and a lack of transparency define food supply networks. Customers' demands highlight the crucial need for creative approaches for validating and certifying food's origin, characteristics, and information. This paper discusses an end-to-end approach to secure food supply chain systems and contributes to meeting regulatory standards for transparency and traceability.

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Chapter - 5

A Study on Factors Affecting the Customer Preferences of Amul Ice Cream Products

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Abstract

The ice cream market growth picked up after de-reservation of the sector in 1997. Of the total size of Rs 15-16 billion, around 30-32% is in the hands of organized sector valued at Rs 4.9bn, rest are in the hands of the unorganized sector. Among the major players in this industry Hindustan Lever has a market share of around 40% represented mainly by Kwality Walls brand, Amul with an estimated market share of 35% is rapidly gaining market share and other players like metro, mother dairy, rollick, cream bell holds 25% of the market share. The purpose of the study is to find the size of the retail network of Amul Ice Cream in specific areas of Kadiri. In the study, I intended to go through the retail network of Amul Ice Cream to know retailers' views about the supply chain of Amul Ice Cream and to know the complaints of Amul Ice Cream. Secondly, to find suggestions from retailers for more penetration of Amul Ice Cream in the Kadiri region. Further, to find out about competitors' activities, find out what schemes they have been using to attract customers as well as retailers.

Keywords: Ice cream, competition, supply chain, retail network

1. Introduction

In the year 1946, the first milk union was established. This union started with 250 liters of milk per day. In the year 1955 AMUL was established. In the year 1946, the union was known as KAIRA DISTRICT CO-OPERATIVE MILK PRODUCERS' UNION. This union selected the brand name AMUL in 1955. The brand name Amul means "AMULYA". This word is derived from the Sanskrit word "AMULYA" which means "PRICELESS". A quality control expert in Anand had suggested the brand

name “AMUL”. Amul Butter, Amul Milk Powder, Amul Ghee, Amul spray, Amul Cheese, Amul Chocolates, Amul Shrikhand, Amul Ice cream, Nutramul, Amul Milk, and Amulya have made Amul a leading food brand in India. (The total sale is Rs. 18 billion in 2012). Today Amul is a symbol of many things the high-quality products sold at reasonable prices, the genesis of a vast cooperative network, the triumph of indigenous technology, the marketing savvy of a farmers' organization and has proven model for dairy development (Generally known as “ANAND PATTERN”). Amul ice cream's commitment to offering only the best quality products is highlighted through its positioning ‘Real milk, Real ice cream. As the brand grows, it is all set to take the category to the next level with the launch of a super-premium range of ice cream in India. Super Premium ice cream is defined as one with a lower amount of aeration and a higher fat content than regular ice cream thereby giving a rich taste & more weight/volume to consumers. It tastes creamier and richer than regular ice creams. Also, it carries high-value ingredients such as premium nuts.

The History of Amul Ice-Creams

Amul Ice Cream was launched on 10th March, 1996 in Gujarat. The portfolio consisted of impulse products like sticks, cones, cups as well as take home packs and institutional/catering packs. Amul ice cream was launched on the platform of ‘Real Milk. Real Ice Cream’ given that it is a milk company and the wholesomeness of its products gives it a competitive advantage. In 1997, Amul ice creams entered Mumbai followed by Chennai in 1998 and Kolkata and Delhi in 2002. Nationally it was rolled out across the country in 1999.

It has combated competition like Walls, Mother Dairy and achieved the No 1 position in the country. This position was achieved in 2001 and it has continued to remain at the top. Today the market share of Amul ice cream is 38% share against the 9% market share of MOTHER DIARY, thus making it 4 times larger than its closest competitor. Not only has it grown at a phenomenal rate but has added a vast variety of flavors to its ever-growing range.

Currently it offers a selection of 220 products. Amul has always brought newness in its products and the same applies for ice creams past couple of year, Indian ice cream market has seen a surge of novelty products made from extrusion technology. Ice cream bars made from conventional sticks filling machines adopt a fixed shape of the mould in which ice cream is frozen into. In case of extrusion technology, a continuous flow of ice cream

coming out of an innovative shape of die is cut in form of ice cream bar. Amul has invested in a state-of-the-art plant to launch extrusion range of ice cream across India and developed super premium range of ice cream exclusively for this product. Amul is not just a dairy giant, but its success of its cooperative structure is a legend in Indian dairy industry. To live up to its reputation, the brand name of this new super premium ice cream range

In January 2007, Amul introduced SUGAR FREE & Prolife Probiotic Wellness Ice Cream, which was a first in India. This range of SUGAR FREE, LOW FAT Diabetic Delight & Prolife Probiotic Wellness Ice Cream is created for the health conscious. Amul's entry into ice creams is regarded as successful due to the large market share it was able to capture within a short period of time – due to price differential, quality of products and of course the brand name. In a short span of 6 years Amul Ice Cream has become the No.1 ice cream brand in the country. It is now the only national brand and all other ice cream brands are regional. Amul Ice Cream has achieved 38% share against 9% market share of MOTHER DIARY making it 4 times larger than its closest competitor.

Various Variants of Amul:

Types: Indian Ice Cream market can be segmented in three different ways, namely on the basis of flavor's; on the basis of stock keeping units / packaging and on the basis of consumer segments. On the basis of flavor's, the market today has a number of flavors like vanilla, strawberry, chocolate, mango, butterscotch and a number of fruit flavors, dry fruit flavor's traditional flavor's like Kesar Pista, Kaju Draksh etc. The market is totally dominated by Vanilla, Butter Scotch and Chocolate, which together account for more than 70% of the market followed by butterscotch and other fruit flavors.

Production Area: The main market for organized sector is restricted to large metropolitan cities. In small towns and villages, there are thousands of small players who produce ice- creams / kulfisin their home backyard and cater to the local market. Almost 40% of the ice creams sold in the country are consumed in the western region with Mumbai being the main market, followed by 30% in the north and 20% in the south.

Growth Promotional Activities: The Indian government adopted the policy of liberalization regarding the ice cream industry also and it is since then that this sector has shown an annual growth ranging from 15- 20% per annum for last 1- 2 years.

2. Literature Review

A number of research papers and articles provide a detailed insight about the role of digital India and the implications of this project in India.

3. Research Methodology

The research was conducted from 26th DECEMBER 2019 to 15th MARCH, 2021. The research includes meetings with the retailers, consumers and dealers. It also includes preparation of the questionnaire to be answered by above people for knowing the competitive position of Amul in the ice cream market. The views of the above parties were recorded in the research as per the questionnaire set by us.

4. Scope of Study

- a. To find the distribution gap in the market.
- b. To create proper branding for existing outlets and convert new outlets for Amul.
- c. To check the awareness as well as level of satisfaction of retailers with distributors & the company.
- d. To analyse the competitor's activity and profit margin through retailers.

5. Need of the Study

Managers are always curious about the position of their company's products in the market which largely depend upon the company's goodwill, and the position of their brand. In order to maximize the sale and profit, company must deliver outstanding satisfaction to the retailers, wholesaler & customers. So, market survey of retailers, wholesalers & customers is required to chart out the position of the company as compared to the competitors. It helps the organization to find out if the brand is being sold most by the retailers along with their stocking and also consumers buying preferences.

6. Objective of the Study

The Primary objective of study was to find size of retail network of Amul Ice Cream in specific areas of Kadiri. In the study my intention was to go through the retail network of Amul Ice Cream to know retailers view about supply chain of Amul Ice Cream, to know the complaints of Amul Ice Cream and to find the suggestions from retailers for more penetration of Amul IceCream in Kadiri region.

The secondary objective was to find out about competitor's activities, finding out what all schemes they have been using to attract customers as well as retailers. My intention was to find out the penetration of the schemes whether it is working out for the competitors or not.

7. Method of Survey

Personal Interview: It is direct form of investigation, involving face-to-face communication with feedback. It offers a sense of participation. It is more flexible form of data collection. Use of unstructured, open-end questions is possible. Rate of refusal is low. Depth interview is possible. Complex questions can be asked. The interview can have questions to secure more information. Visual aids in the form of catalogues samples etc. can be used to get views, opinions, and attitudes of responder.

8. Research Approach

The objective was to know the competitive position of Amul in the market, thus in order to successfully conduct the research an unbiased opinion of the above parties was desirable. Thus, I conducted the research as the representative of AMUL Company

9. Data Analysis

The data analysis was done area wise. It gives idea about the competitors of Amul Ice Cream. It gives information regarding their market share. Analysis of Marketing Mix Strategy of Amul Ice-cream: I took up Amul Ice Cream as a product for our study and analysis. The project basic objective was to acquire a deeper understanding of the product and apply the concepts related to marketing mix, 4P's of marketing and the consumer behaviour as learnt in the course. The project was studied in three parts:

- Marketing mix of Amul Ice cream
 - Study of the consumer behavior with the help of a structured questionnaire
 - Marketing mix of two main competitors; Kwality Wall's and Mother Dairy, suggestions and foresight about Amul Ice Creams
- In the first part, we studied the marketing mix of Amul ice cream which was further divided into four parts: Product, Price, Place and Promotion

Marketing Mix of Amul Ice Cream:

Amul Ice Cream was launched on 10th March, 1996 in Gujarat. It was launched on the platform of 'Real Milk. Real Ice Cream' given that it is a

milk company and the wholesomeness of its products gives it a competitive advantage. In 1997, Amul ice creams entered Mumbai followed by Chennai in 1998 and Kolkata and Delhi in 2002. Nationally it was rolled out across the country in 1999.

It has combated competition from the established players like Walls, Mother Dairy and achieved the No 1 position in the country. This position was achieved in 2001 and it has continued to remain at the top. Today the market share of Amul ice cream is 38% as against the 9% market share of Mother Dairy, thus making it 4 times larger than its closest competitor.

Product

Amul has added a vast variety of flavors to its ever-growing range. Currently it offers a selection of 220 products. Amul has always brought newness in its products and the same applies for ice creams.

The broad heads under which Amul markets its ice creams are as follows:

- Royal treat range (rajbhog, cappuccino, Choco chips, butterscotch, tutti Frutti)
- Nut-o-mania range (kaju draksh, kesar pista, roasted almond, kesar carnival, badshahibadam kulfi, shista pista kulfi)
- Utsav range (anjir, roasted almond)

10. Summary and Conclusion

In today's competitive world while entering in the market it is very necessary to have good knowledge of the potential of a particular market. The information regarding the activities of competitor's existing in the market is very essential in chalking out our own plan. It is also necessary to retain the existing customers apart from attracting the new customers. The Project is concerned with the market analysis & sales development of Amul Ice Cream in Kadiri. The project is included as a part of BBA program and is carried out from 26-12-2019 to 15-03-2020.

11. Findings

In Kadiri region there are numerous numbers of players. Few of them are KWALITY WALLS, METRO, MOTHER DAIRY, and CREAM BELL. As per the findings KWALITY WALLS is the Market leader and has the largest market share. Awareness and acceptance of Amul Ice Cream among the retailers as well as consumers is high but market coverage is very average.

12. Conclusion

Amul means different things to different people.

To a milk producer – A life enriching experience

To a consumer – Assurance of having wholesome milk

To a mother – A reliable source of nourishment for her child

To the country – Rural development and self-reliance

As we know that Amul is very big organization and market leader in dairy products. It has maximum market share in Milk, Butter and Cheese which are its main/core products. But in case of Amul Ice cream, it is not a popular product as compared to other Amul Products.

All the retailers feel that Amul products are very good in taste and once a customer tries it, they become a loyalist to the brand but, then again, supply shortages have led to customers shifting to other brands and retailers too start keeping less of Amul Ice Cream. Also, strong marketing tactics adopted by other brands have resulted in Amul Ice cream being left behind. It was a great experience working in Amul. The people, the work culture, working environment was very comfortable and easy to get accustomed with. These two weeks in Amul were not only enriching but a great learning curve, where I learned how a big company like Amul works, what routine they follow, what are their hierarchy structure, how they successfully manage such a huge supply chain. Amul also taught me how a market leader becomes a market leader, what they have done to reach that position and to also maintain it for years and years. I was made a part of most of the meetings that were conducted at the distributor's point where all the issues were discussed which was very helpful for me in understanding how grievances and problems handled are. As I conclude this project, I would like to tell that Amul has great potential and with the help of this research, I hope company can find out its drawbacks and can increase its market share by rectifying its mistakes. People have believed in Amul's product always and they will accept it also if effective actions are taken.

Limitations of the Study

- The Questionnaire mostly contained multiple choice questions; therefore, many respondents did not give a proper answer for the questions.
- Respondents may have given biased or false information.
- The analysis is purely based on the responses of the respondents.

- The sample size taken was small, it cannot be representative of the population

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Chapter - 6

The Impact of Relevant Costing for Decision-Making in Ready-Made Garments (Rmgs) Industry of India

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Abstract

Relevant costing is a management accounting term that relates to focus on only the cost relevant to a specific decision being made. Irrelevant costs are excluded from any incremental decision-making problem because they are supposed to have equal effects on all the available alternatives (Dillon, R. D. and, J. F. Nash, 1978). This study adopts an observation of quantitative method with primary and secondary data in view of the nature of the analysis. Relevant costing is often used in short-term decision-making and a number of specific practical examples are illustrated in this study. This study has designed to make the aim of assessing the level of perceptions of four areas such as (i) making and buying; (ii) dropping or retaining a segment; (iii) constrained resources; and (iv) special orders; in using relevant costing in Ready-Made Garments (RMGs) industry of India. To meet this aim total 100 companies as a sample from Ready-Made Garments (RMGs) industry have been randomly selected. By using variance analysis, authors have found that all four factors have significant influence in using relevant costing. Last, the result of this study suggested that the strengthening the decision-making mechanism required a strong relevant costing benefits and its proper application.

Keywords: Relevant costing, Constrained Resources, and Ready-Made Garments (RMGs) Industry etc.

1. Introduction

The RMGs industry has become India key export industry and a main source of foreign exchange for the last 25 years. As a result of an insulated

market guaranteed by Multi-Fibre Agreement (MFA) of General Agreement Tariff and Trade (GATT) and supportive policies of the Government of India (GoI), it attained a high profile in terms of foreign exchange earnings, exports, industrialization and contribution to the GDP within a short period. In less than a decade Government increased its exports, foreign exchange earnings, and contribution to the GDP by 4.39 %. RMGs exports reached a steadfast figure of USD

17.91 billion in fiscal year 2010-2011; accounting more than 78% of national export earnings, which was about 4%-5% of the global total of such exports. It further contributes 10% to the country GDP (Mahmud R.B., 2012). The foreign exchange earnings and employment generation of the RMGs sector have been increasing at double-digit rates from year to year (Quddus, Rashid & Mainuddin, 2000). Currently, there are more than 4,000 RMGs companies in India. More than 95 per cent of those firms are locally owned with the exception of a few foreign firms located in export processing zones (Gonzales, 2002).

Management oriented accounting should be able to oversee the successful implementation of decisions, from which are shown the true values which are compared with standard values (Mihaela Tulvinschi, 2010). Relevant costs and revenues are those future costs and revenues that will be changed by a decision, whereas irrelevant costs and revenues are those that will be not affected by a decision (Drury, 2004). Any cost would be an asset if it has a favorable economic effect on expected future costs or future revenues. In other words, if a given cost represents a future economic benefit in the form of a reduction of total expected future costs or an addition to total expected future revenue in the ordinary course of business it is a relevant cost and should be considered unexpired (Fess P.E., 1963). If the costs increase, decrease, appear and disappear as different alternatives are concerned, it is a relevant cost (Lal, 2005). In case of relevant cost concepts, one is to compare relevant revenues with relevant cost and ignore historic sunk and past cost, from the decision-making process so that decision can be protected from being misled.

1.1 Literature Review

Relevant costs are future cash flows arising as a direct consequence of the decision under consideration. In many short-term situations, the fixed costs remain constant for each of the alternatives being considered and thus the marginal costing approach showing sales, marginal cost and contribution is particularly appropriate. In the long run (and sometimes in the

short run) fixed costs do change and accordingly the differential costs must include any changes in the amount of fixed costs (Schweikart J. A., 1986).

Making the decision is often a difficult task that is complicated by numerous alternatives and massive amountsof data, only some of which may be relevant (Victoravich L. M., 2010). Relevant cost is a cost whose magnitude will be affected by a decision being made. Management should consider only future costs and revenues that will differ under each alternative (Arora, 2008). Relevant information is the predicted future costs and revenues that will differ among the alternatives relevant information (Horngren, et al, 2006).

Each decision involves choosing from between two alternatives. In making a decision, the cost and benefits of one alternative must be compared to the costs and benefits of other alternatives. Costs that differ between alternatives are relevant costs. Distinguishing between relevant and irrelevant cost and benefits is critical for two reasons: First, irrelevant data can be ignored – saving decision makers tremendous amount of time and effort. Second, bad decisions can easily result from erroneously including irrelevant cost and benefits when analyzing alternatives (Garrison & Noreen, 2012).

When choosing among different alternatives, the manager should concentrate only on the costs and revenues that differ across the decision alternatives; these are relevant cost/revenues. Whether particular costs and revenues are relevant for decision making depends on decision context and the alternatives available (Atkinson, et al, 2008). Relevant cost should be used for assessing the economic and financial consequences of any decision by management. Only relevant cost and benefits should be taken into consideration when evaluating the financial consequences of a decision (Emile Woolf, 2011).

Therefore, the study shows that how relevant costing and benefit play a significant role in decision making for a Ready-made Garments Industry in India.

1.2 Objectives of the Study

The objectives of this study are as follows:

- To show the application of relevant costing terms in decision-making.
- To show the impact of relevant costing for decision-making in Ready-made Garments Industry (RMG)of India.

2. Methodology of the Study

Data Collection and Sample: This study is mainly based on the both primary and secondary data. A structured survey questionnaire has been used for primary data collection. Sample size total 100 respondents company have been selected from BGMEA database and surveyed on a random sampling basis. Interviewed to get the answers of the questionnaires to one employee from each company such as General Manager, Assistant Manager, Cost & Management Accountant (CMA) or others industry employees & specialist. In the questionnaire the perception has been calculated by 5 point Likert type measurement scale where 5 = Strongly Agree and 1= Strongly Disagree. Secondary sources are from different local and international published articles,books, websites, and seminar papers etc.

Data analysis: Data have been analyzed by using Mean value and Two-way ANOVA test. Significance level is5%.

Study period: Time of the study was November 2013 to January, 2014.

3. Applicability of Relevant Cost Concepts:

3.1 Making or Buying decision: (Harper College Tutorial, 2010)

For many years Pinaki Garments Ltd. Company has purchased the starters that it is installed in its standard line of sweing machine. Due to a reduction in output, the company has idle capacity that could be used to produce the starters. The chief engineer has recommended against this moves, however, pointing out that the cost to produce the starters would be greater than the current \$10.00 per unit purchase price. The company's unit product cost, based on a production level of 60,000 starters per year, is as follows:

Particular	Make	
Direct materials	\$4.00	
Direct labor	2.75	
Variable manufacturing overhead	.50	
Fixed manufacturing overhead, traceable	3.00	\$180,000
Fixed manufacturing overhead, common (allocated based on direct labor hours)	2.25	\$135,000
Total production cost	\$12.50	

An outside supplier has offered to supply the starter to PINAKI or only \$10.00 per starter. One-third of the traceable fixed manufacturing costs represent supervisory salaries and other costs that can be eliminated of the starters are purchased. The other two-third of the traceable fixed manufacturing costs are a depreciation of special manufacturing equipment that has no resale value. The decision would have no effect on the common

fixed costs of the company and the space being used to produce the parts would otherwise be idle.

Decision

Particulars	Relevant Costs	
	Make	Buy
Direct materials	\$4.00	
Direct labor	2.75	
Variable manufacturing overhead	.50	
Fixed manufacturing overhead, traceable	1.00	
Purchase price		\$10.00
Total relevant cost	\$8.25	\$10.00
Units produced	60,000	60,000
Total Cost	\$495,000	\$600,000

The two-third of the traceable fixed manufacturing overhead costs that cannot be eliminated, and all of the common fixed manufacturing overhead costs, are irrelevant. The company would save \$105,000 per year by continuing to make the parts itself. In other words, profits would decline by \$105,000 per year if the parts were purchased from the outside supplier.

3.2 Dropping or Retaining a Segment: (Harper College Tutorial, 2010)

Another area in which Relevant Costing is used is whether to drop a division or product. Companies often prepare income statements for their divisions or products. H.R. FASHION, a fabrics company has two departments, X and Y. A recent monthly contribution format income state of the company follows.

Particulars	X	Y	Total
Sales	\$3,000,000	\$1,000,000	\$4,000,000
Variable expenses	900,000	400,000	1,300,000
Contribution margin	2,100,000	600,000	2,700,000
Fixed expenses	1,400,000	800,000	2,200,000
Operating income (loss)	\$700,000	(\$200,000)	\$500,000

The study indicates that \$340,000 of the fixed expenses being charged to Y are sunk costs or allocated costs that will continue even if Y is dropped. In addition, the elimination of Y will result in a 10% decrease in the sales of X.

Decision

Particulars	Total
Department Y contribution margin lost	(\$600,000)
Department X contribution margin lost	(210,000)
Total contribution margin lost	(810,000)

Avoidable fixed costs	460,000
Decrease in operating income	(\$350,000)

Contribution margin lost if Y is dropped. Therefore, based on the data given, the Y segment should not be discontinued unless a more profitable use can be found.

3.3 Special Orders: (Harper College Tutorial, 2010)

Special Orders are a classic area in which Relevant Costing is used. The customer is in an area that your business does not normally serve. The potential customer offers to buy your product or service at a price below the cost to provide the product or service (The special order).

A-Z KNITWEARS LTD. produces a single product. The cost of producing and selling a single unit of this product at the company's normal activity level of 8,000 units per year is:

Particulars	Total
Direct materials	\$2.50
Direct labor	3.00
Variable manufacturing overhead	.50
Fixed manufacturing overhead	4.25
Variable selling and administrative expense	1.50
Fixed selling and administrative expense	2.00

The normal selling price is \$15.00 per unit. The company's capacity is 10,000 units per month. An order has been received from an overseas source for 2,000 units at the special price of \$12.00 per unit. This order would not affect regular sales. If the order is accepted, how much will monthly profits increase or decrease? (The order will not change the company's total fixed costs.)

Decision

Particulars	Amount	Total
Selling price		\$12.00
Direct materials	\$2.50	
Direct labor	3.00	
Variable manufacturing overhead	.50	
Variable selling and administrative expense	1.50	
Total variable expenses		7.50
Contribution margin	4.50	
Units sold		2,000
Total contribution margin		\$9,000

The relevant cost is \$1.50 (the variable selling and administrative costs). All other variable costs are sunk, since the units have already been produced. The fixed costs would not be relevant, since they will not be affected by the sale of leftover units.

3.4 Constrained Resources: (Harper College Tutorial, 2010)

Relevant Costing is also very useful when deciding whether you should outsource a product. In these problems, you can either make an item that you use in your business or you can purchase it from an outside supplier. Peoples Fashion LTD. produces three products, X, Y, and Z. Data regarding the three products is as follows:

Particulars	X	Y	Z
Selling price	\$80.00	\$56.00	\$70.00
Variable expenses:			
Direct materials	24.00	15.00	9.00
Direct labor	14.00	13.00	15.00
Other variable expenses	10.00	14.00	25.00
Contribution margin	\$32.00	\$14.00	\$21.00

Demand for the company’s products is very stronger, with far more order each month than the company can produce with the available raw materials. The same material is used in each product. The material cost \$3 per pound, with a maximum of 5,000 pounds available each month. In which order should the company produce X, Y and Z?

Decision

Particulars	X	Y	Z
Direct materials cost	\$24.00	\$15.00	\$9.00
Cost per pound	\$3.00	\$3.00	\$3.00
Direct material pounds per unit	8.00	5.00	3.00
Contribution margin	\$32.00	\$14.00	\$21.00
Contribution margin per pound	\$4.00	\$2.80	\$7.00

The company should accept orders first for Z, second for X and third for Y.

4. Analysis and Discussion

To measure whether perception levels of four factors is same or not in Ready-Made Garments (RMGs) Industry,the authors have applied two-way ANOVA analysis using two hypotheses.

Hypothesis-1:

H_0 = There is no significant relationship between the relevant costing and decision making of Ready-made Garments Industry in India.

H_A = There is a significant relationship between them.

Hypothesis-2

H_0 = The four levels of relevant costing factor are not equal for decision making in Ready-made Garments Industry in India.

H_A = All the four levels are equal.

Table 1.1: Mean value

Relevant Costing Factor	Total Respondent's points for Decision making					Total
	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	
Making & buying	350	100	12	2	0	=464
Dropping or retaining a segment	105	48	120	24	15	= 312
Constrained resources	225	124	12	10	25	= 396
Special orders	40	116	99	36	12	=303
Total	720	388	243	72	52	=1475

$$\text{Correction Factor} = \frac{T^2}{N}$$

$$= \frac{(1475)^2}{20} = 108781.25$$

Sum of Square between decision making:

$$= \frac{(720)^2}{4} + \frac{(388)^2}{4} + \frac{(243)^2}{4} + \frac{(72)^2}{4} + \frac{(52)^2}{4} - C.F$$

$$= (129600 + 37636 + 14762.25 + 1296 + 676) - 108781.25$$

$$= 75189$$

$$V = (c-1) = (5-1) = 4$$

Sum of Square between Relevant Costing:

$$= \frac{(464)^2}{5} + \frac{(312)^2}{5} + \frac{(396)^2}{5} + \frac{(303)^2}{5} - C.F$$

$$= (43059.2 + 19468.8 + 31363.2 + 18361.8) - 108781.25$$

$$= 3471.75$$

$$V = (r-1) = (4-1) = 3$$

$$\text{Total Sum} = (0)^2 + (15)^2 + (25)^2 + (12)^2 + (2)^2 + (24)^2 + (10)^2 + (36)^2 + (12)^2 + (120)^2 + (12)^2 + (99)^2 + (100)^2 + (48)^2 + (124)^2 + (116)^2 + (350)^2 + (105)^2 + (225)^2 + (40)^2 - C.F$$

$$= (254,345 - 108,781.25)$$

$$= 145,563.75$$

$$\text{Residual value} = (145,563.75 - 75,189 - 3,471.75)$$

$$= 66,903$$

$$V = (c-1)(r-1)$$

$$= 4*3 = 12$$

Table 1.2: ANOVA Analysis

Source of Variation	S.S.	d.f.	Mean Square	F	Level of Sig. 5%
Between decision making	75,189	4	18,797.25	3.38	3.26
Between Relevant costing	3,471.75	3	1,157.25	0.22	3.49
Residual	66,903	12	5,575.25		
Total	145563.75	19			

The above table shows that the relationship between the relevant costing and decision making of Ready-made Garments (RMGs) Industry in India vary due to the calculated value 3.38 and the table value for F (4,12) is 3.26. On the other hand, the using relevant costing in respect of four factors in decision making are not same. The calculated value between relevant costing is 0.22, but the table value for F (3, 12) at the 5% level of significance= 3.49.

Appendix

A. Total Respondant =100.

Relevant CostingFactor	Number of Respondent's answer for Decision making				
	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Making & buying	70	25	4	1	0
Dropping or retaining a segment	21	12	40	12	15
Constrained resources	45	31	4	5	25
Special orders	8	29	33	18	12

B. Likert Type Measurement Scale:

Strongly Agree = 5 points strongly = 4 points
Undecided = 3 points
Disagree = 2 points strongly Disagree = 1 points

Relevant Costing Factor	Total Respondent's points for Decision making				
	Strongly Agree (5)	Agree (4)	Undecided (3)	Disagree (2)	Strongly Disagree(1)
Making & buying	350	100	12	2	0
Dropping or retaining a segment	105	48	120	24	15
Constrained resources	225	124	12	10	25
Special orders	40	116	99	36	12

5. Conclusion

Relevant costing provide a very useful way of assessing whether company that shows a loss at the net marginal level are nevertheless viable in the short-term. Consumers are more and more demanding, looking for everything at a very attractive price. The company has to master revenues and costs very carefully to make a profit (Kaplan, 1990). The relevant costing will vary with each company according to circumstances. In our analysis for hypothesis test one, we reject the null hypothesis and accept the alternative which shows that there is a significant relationship between the relevant costing and decision making of RMGs in India. But in test two we reject alternative and accept null hypothesis because of the result means the decision regarding the four levels of relevant costing varies. Everything in this study consists of application of one simple, but powerful idea. This simple idea was applied in a variety of situations including decisions that involve adding or dropping a product line, making or buying a component, accepting or rejecting a special order, using a constrained resource in RMGs in India. Indeed, any decision involving costs hinges on the proper identification and analysis of the costs that are relevant. Consequently, relevant costing is an important concept in Managerial accounting which clearly depicts in this study about successful decision making in RMGs in India.

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Chapter - 7

A Study on Exporter's Opinion on Documentation with Special Reference to Mangalore

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Abstract

Foreign trade takes place because the price at which a commodity can be produced by different nations differ. Countries concentrate in producing those goods and services which they can produce at cheaper cost than others. The production will be at a level higher than the requirement for domestic consumption. The earnings from exports are used to, import commodities in which the country has cost disadvantage. A country will import a commodity as long as costs higher to produce the same commodity domestically. Thus, international trade will take place so long as there is a price differential between imported and domestically produced goods. This study focuses on exporter's opinion on documentation in Mangalore Port Trust.

“A Study on Exporter's Opinion on Documentation with Special Reference to Mangalore”

Trade refers to exchange of goods and services between two persons. No individual is capable of producing all his requirements in terms of goods and services. Therefore, everyone specializes in any one or few activities which he can execute efficiently and shares the surplus with others who need them. Similarly, he obtains from others' goods and services which he does not produce himself. Initially, the trade was in the nature of barter where a goods or service was exchanged for another good or service having equal value. After invention of money, exchange of goods and services has been facilitated by providing a common denominator for expressing the value of goods or services exchanged in the 'form of price in currency terms. The use of money has also dispensed with the biggest hurdle under barter, viz., the need to find another person whose need matched with what the individual could offer and,

in turn, he had with him the item that the individual needed (double coincidence of wants).

When trade takes place between residents in two different countries, it is known as international trade or foreign trade or cross trade. The trade may be between individuals, corporations, other entities or governments. International trade takes place for same reasons that underlie internal trade. However international trade brings in a new dimension of more than one country being involved. Each country places primacy on the welfare its own citizens. Therefore, generally foreign trade is placed under greater number of formalities and more stringent regulations than that exist for domestic trade. Sale in international trade is known as export and purchase as import. The parties respectively are exporter and importer.

When a country does not involve itself in trade with other countries, it is stated to function in autarky. Such an economy is a closed economy. The residents of the country consume what is produced in the country. There are neither exports from the country nor imports into the country. At present, such an economy can only be hypothetical. Can you imagine the situation for such a large and naturally gifted country like India to remain closed to international trade? You will agree that definitely the standard of living of people of India would be much worse than their present status.

Nations participating in the international trade are known as open economies. Nations opt to remain open economies because they realize that the welfare of their citizens are improved through international trade

Objectives

- To study the various documents involved in international trade and
- The exporters' opinion on the preparation of documents
- To study the role of freight forwarding agencies.
- To find various services rendered by freight forwarding agencies
- To study the level of satisfaction towards the services rendered by freight forwarding agencies.
- To find out the opinion of exporters on new documentation method.
- To provide suggestions for the better service of freight forwarding agencies.

Research Methodology

Type of Research

The study adopted is descriptive and analytical research method. The

major purpose of this study is description of the state of affairs as it exists at present. The survey enables only to report what has happened or what is happening.

Sampling Design

The technique is convenient sampling.

Sample Size

The sample size for the study is 50.

Data Collection

While deciding about the method of data collection, the researcher should keep in the mind about two types of data. They are,

- Primary data
- Secondary data

Analysis and Interpretation

Types of Goods Exported

Types Of Goods	Number Of Respondents	Percentage
Engineering goods	13	26
Construction goods	17	34
Live stock	11	22
Consumable goods	8	16
Others	1	2
Total	50	100

Source: Primary Data

From the above table it is clear that 34% of the respondents are construction goods, 26% of the respondents are engineering goods, 22% of the respondents are live stock and 16% of the respondents are consumable goods, 2% of the respondents are others.

Procedure Followed in India Exporter is Simple

Response	Number Of Respondents	Percentage
Strongly agree	17	34
Agree	31	62
Neither agree nor disagree	1	2
Disagree	1	2
Strongly disagree	0	0
Total	50	100

Source: Primary Data

From the above table it is clear that 62% of respondents are agree, 34% of respondents are strongly agree, 2% of respondents are neither agree nor disagree, 2% of respondents are disagree and 0% of respondents are strongly disagree.

Findings

- Most of the exporters (34%) were attaining turnover around 50 to 90 lakhs.
- Most of the exporters (26%) were attaining export turnover around 10 to 30 lakhs.
- Most of the exporters (46%) own their concern with seasonal.
- Most of the exporters (48%) were agreed with number of documents involved in export.
- Majority of the exporters (62%) were agreed with export procedure followed in India is simple.
- Majority of the exporters (70%) were agreed with preparation of documents under new method is simple.
- Majority of the exporters (54%) were agreed with clearing procedure in the ports are not hassle free.
- Majority of the exporters (54%) were strongly agreed with clearing procedure in the ports are time consuming.
- Majority of the exporters (84%) were not agreed with export documentation work without the help of freight forwarders.
- Most of the exporters (44%) were strongly agreed with time taken for the clearance of good can be reduced.

Suggestions

- The clearing procedures handled in the ports can be changed and new technologies can be followed to improve the efficiency of the port.
- Standard rates can be fixed for the documentation process and forwarding process.
- The documentation work can be made transparent so that the exporters can do it on their own.
- The rebate duty claimable by the exporters for the goods exported can be given to the exporters without any complications.

Conclusion

Export is the backbone for a Country's economy; Exporter's should be

given full support by the Government by helping them to find new technologies and the feasibility to utilize it. The export process in our country seems to have minor constraints and hence the Government should take measures to avoid those constraints and ensure a smooth in the process. The Documentation and forwarding charges vary to a large extent from one CHA to another CHA, so there should be a basic or a standard slab price for the documentation work done by the CHA's.

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Chapter - 8

A Study on Supply Chain Efficiency of Big Basket India with Special Reference to Bengaluru

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Abstract

Bigbasket.com (Innovative Retail Concepts Private Limited) is India's largest online food and grocery store. With over 18,000 products and over 1000 brands in the catalogue Where, We can find everything one is looking for. Right from fresh Fruits and Vegetables, Rice and Dals, Spices and Seasonings to Packaged products, Beverages, Personal care products, Meats – we have it all. Choose from a wide range of options in every category, exclusively handpicked to help you find the best quality available at the lowest prices. Select a time slot for delivery and your order will be delivered right to your doorstep. This study aims at finding the supply chain efficiency of Big Basket India with special reference to Bengaluru city in Karnataka.

Keywords: Brands, products, delivery, order.

Introduction

The Indian E-commerce industry has been on an upward growth trajectory and is expected to surpass the US to become the second-largest E-commerce market in the world by 2034. India's e-commerce sector is expected to reach US\$ 111.40 billion by 2025 from US\$ 46.20 billion in 2020, growing at a 19.24% CAGR, with grocery and fashion/apparel likely to be the key drivers of incremental growth. The Indian online grocery market is estimated to reach US\$ 26.93 billion in 2027 from US\$ 3.95 billion in FY21, expanding at a CAGR of 33%.

The India's e-commerce market is expected to reach US\$ 350 billion by 2030. By 2021, total e-commerce sales are expected to reach US\$ 67-84 billion from the US\$ 52.57 billion recorded in 2020. India's e-commerce

market is expected to reach US\$ 111 billion by 2024 and US\$ 200 billion by 2026. For the 2021 festive season, Indian e-commerce platforms generated sales worth US\$ 9.2 billion gross GMV (Gross Merchandise Value), a 23% increase from last year's US\$ 7.4 billion.

The Indian e-commerce sector is ranked 9th in cross-border growth in the world, according to Payoneer report. Indian e-commerce is projected to increase from 4% of the total food and grocery, apparel and consumer electronics retail trade in 2020 to 8% by 2025. The Indian online grocery market is estimated to reach US\$ 26.93 billion in 2027 from US\$ 3.95 billion in FY21, expanding at a CAGR of 33%. As of February 15, 2022, the Government e-Marketplace (GeM) portal served 9.04 million orders worth Rs. 193,265 crore (US\$ 25.65 billion) to 58,058 buyers from 3.79 million registered sellers and service providers.

India's social commerce has a potential to expand to US\$ 16–20 billion in FY25, at a CAGR of 55–60% with a potentially monumental jump to US\$ 70 billion by 2030, owing to high mobile usage. India's e-commerce order volume increased by 36% in the last quarter of 2020, with the personal care, beauty & wellness (PCB&W) segment being the largest beneficiary. Driven by beauty and personal care (BPC), India's live commerce market is expected to reach a gross merchandise value (GMV) of US\$ 4-5 billion by 2025.

Online penetration of retail is expected to reach 10.7% by 2024 compared with 4.7% in 2019. Moreover, online shoppers in India are expected to reach 220 million by 2025. According to a report published by IAMAI and Kantar Research, India internet users are expected to reach 900 million by 2025 from ~622 million internet users in 2020, increasing at a CAGR of 45% until 2025.

Through its Digital India campaign, the Government of India is aiming to create a trillion-dollar online economy by 2025. It has formed a new steering committee that will look after the development of a government-based e-commerce platform. The new committee, set up by the Commerce Ministry, will provide oversight on the policy for the Open Network for Digital Commerce (ONDC), which is an e-commerce platform that the government is backing for the development. The ONDC will serve as the infrastructure for setting up the final storefront, which will be similar to Flipkart and Amazon.

Big basket currently operates in 30 cities namely Hyderabad, Mumbai, Kochi, Pune, Chennai, Delhi, Noida, Mysore, Coimbatore, Vijayawada-Guntur, Kolkata, Ahmedabad-Gandhinagar, Lucknow-Kanpur, Gurgaon, Vadodara, Visakhapatnam, Surat, Nagpur, Patna, Indore and Chandigarh city limits.

Customers use a mobile application to order groceries online, big basket employees then secure the items from their warehouse and deliver the items to the consumer. Big Basket has partnered with Bayer Crop Science project which has over 8000 local farmers across India that help harvest crops and processed at their collection centers. In December 2018, Big Basket launched bbdaily service to deliver milk to its customers. In June 2018, they launched bb instant. During the Coronavirus pandemic in 2020, Big Basket along with Grofers and Amazon India was among the few online grocery platforms that continued to operate in India.

Review of Literature

(Korgaonkar *et al.*2004) hypothesize that advertising campaigns were successful in increasing sales when they were for nondurable products with unique attributes, were 36 geared to the consumer market and backed by adequate financial resources, and when they featured unique and creative messages. It also found that favorable product attributes could be achieved by advertising campaigns that promoted product uniqueness, had adequate financial resources, and used creative messages and appropriate media. (Denning 2006) advocates that advertising serves primarily a persuasive role. According to this view, advertising increases product differentiation and deters entry by contributing recognition and prestige to advertised goods, thereby inflating the market power of firms selling advertised goods and bracing prices. (Nelson 2004), points to the important role of advertising in providing price and product quality information. Informative advertising reduces the costs associated with consumer search and facilitates substitution possibilities between products, resulting in lower prices and superior market performance.

(Shah *et al.* 2009) posit that other marketing variables such as economic conditions and the level of competition in the market also influence the advertising-sales relationship. Murphy and Cunningham (1993) state that linking advertising with sales impact is not appropriate as other marketing variables such as economic factors, market factors, affect the company sale. Theoretically, advertising can have direct influence on firm performance through its impact on market value or generating high returns for advertising firms. Similarly, advertising can also have indirect influence on firm performance by virtue of its ability to influence sales and profitability of a firm (Joshi and Hanssens, 2010). (Kim *et. al*2002) established a positive link between advertising and profitability for those firms operating mainly in consumer goods industries.

Objectives of the Study

- To understand the preferences of customers in choosing a particular shopping website.
- To understand the approach of customers towards on-line shopping big basket.
- To determine the preference of consumers with respect towards aspects of on-line shopping.
- To analyze the challenges faced by the users while placing order on-line at big basket.
- To evaluate the beneficial criteria for on-line shopping at big basket.

Hypotheses

Probability sampling means that every member of the population has a chance of being selected. It is mainly used in quantitative research. If you want to produce results that are representative of the whole population, probability sampling techniques are the most valid choice. It is important to understand why we sample the population; for example, studies are built to investigate the relationships between risk factors and disease. In other words, we want to find out if this is a true association, while still aiming for the minimum risk for errors such as: chance, bias or confounding. However, it would not be feasible to experiment on the whole population, we would need to take a good sample and aim to reduce the risk of having errors by proper sampling technique.

Simple Random Sampling

In a simple random sample, every member of the population has an equal chance of being selected. Your sampling frame should include the whole population. To conduct this type of sampling, you can use tools like random number generators or other techniques that are based entirely on chance.

Sampling Size- 100.

Analysis and Interpretation

Which Type Of Platform Do You Use?

Options	No. of Respondent	Percentage
Swiggy Instamart	12	33.3
Zepto	4	11.1
Blink it	3	8.3
Dunzo	3	8.3
Amazon Fresh	9	25

Pickly	4	11.1
None	1	2.9
TOTAL	36	100

Interpretation:

A part from big basket other platform people should use 33 percent of people are choosing Swiggy and 11 percentage of people use Zepto and 8 percent of people are using blink it and 8 percent of people using dunzo and 25 percentage of people are using amazon fresh apart from big basket and total number of respondents are 36

Which City are you Located?

Options	No. of Respondent	Percentage
Bangalore	26	76.5
Hyderabad	3	8.8
Chennai	0	0
Mumbai	0	0
Pune	0	0
Delhi	3	8.8
Gurgaon	0	0
Noida	2	5.9
TOTAL	34	100

Interpretation

In my study 76.5 percent of people are belongs to Bangalore and 23.5 percent of people and other and total number of respondent in my study is 34

Major Findings

- 51.6 percent of people are daily users in big basket and 48.4 percent of people are instant users and total number of respondents are 62.
- 54.5 percent of people are choosing excellent and 39.4 percent of people are choosing good and 6.1 percent of people are choosing fair and total number of respondents are in the study is 33 and majority of people are choosing excellent in the study.
- 65.6 percent of people come with friends and 34.4 percent of people are comes with local vendors.
- 46.7 percent of people are coming with friends and family and 33.3 percent of people are social platform so slowly increases social platform users and 20 percent of people are comes across newspapers.

Recommendations

Transportation facility should be revised & increased in order to meet the customer's requirement. Supply chain management department has to improve the packing design of the products. Along with that company should provide proper training to their staff that problem regarding the grading would not take place. Customer also had their view and suggestion is better delivery of products and to proper communication with customer and fast in service.

Conclusions

There are still many gaps in the supply chain of the company and they must try our best to fulfill these gaps so that we provide better service to our customer and also reduce our operating cost because we are in value E commerce so only cost cutting provides us better margins and to archive all this we have to work hard and make strong relation with our vendors, logistics service provider and with our customer. Products are developed to meet customer requirement. Brands are positioned so as to convey distinctiveness. Delivery to reinforce the promptness in making available to consumers a value-added products. Create good relation with the vendors to attain a quality product from them response.

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Chapter - 9

Analysis of Supply Chain Management in E-Commerce of Amazon India

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Abstract

E-Commerce is a part of e-business. E-Business is all about exchanging information online, but e-Commerce is just about buying and selling things online. Information and communication technology (ICT) can be used in many different ways across functional domains. For example, online sales to customers are only a small part of the possibilities that e-business can open up. Companies are using e-business ideas more and more as a part of their strategy to give them an edge over their competitors. In particular, vertical Business-to-Business (B2B) applications and systems have made it possible for companies to interact in a dynamic, innovative, and real-time environment. This has led to better supply network integration. In this study we examine how Amazon India utilizes E-Commerce for effective supply chain management.

Keywords: Supply Chain Management, Logistics, E-Commerce.

Introduction

Organizations that do e-business well can convert data from their back-end systems into a format that everyone can read. This lets them share information with their business partners and do electronic transactions with them over the Internet. It also includes the use of new business ideas like dynamic pricing through auctions and reverse auctions, co-operation through buying groups, and selling directly to customers online. E-Commerce is a part of e-business. E-Business is all about exchanging information online, but e-Commerce is just about buying and selling things online. Information and communication technology (ICT) can be used in many different ways across functional domains. For example, online sales to customers are only a small part of the possibilities that e-business can open up. Companies are using e-

business ideas more and more as a part of their strategy to give them an edge over their competitors. In particular, vertical Business- to-Business (B2B) applications and systems have made it possible for companies to interact in a dynamic, innovative, and real-time environment. This has led to better supply network integration.

Supply chain management is delivering the right product to the right place, at the right time, and at the right price and is one of the most powerful engines of business transformation. It is one of the leading cost-saving and revenue enhancement strategies in use today. At the end of trends that started off from Business Process Reengineering, Total Quality Management, and ERP that has all addressed only the inner workings of an Organization, SCM aims at integrating the company's internal systems with those of its suppliers, partners, and customers. Electronic commerce, commonly known as e-commerce or eCommerce, or e-business consists of the buying and -selling of products or services over electronic systems such as the Internet and other computer networks.

E-commerce does not just mean trading and shopping on the Internet. It means business efficiency at all operation levels. Executives know it is critical to effective business operations, but until now quantifiable performance measures have been as scarce as the number of corporate executives who heard of the phrase "supply chain management" (SCM). Information and communications technology (ICT) in supply chain management has enabled corporations to use offshore facilities for outsourcing commercial activities. E-business is concerned with the use of the Internet to link companies with their suppliers, customers, and other trading partners. As a business concept, it has evolved significantly since its introduction in the 1990s in parallel with the rapid rate of development of information technology (IT) during this period. Supply chain management (SCM) is fundamentally concerned with the integration of activities both with and between organizations. IT plays a crucial role in SCM as a key enabler of supply chain integration (SCI).

Research Methodology

The proposed methodology for predicting the likelihood of consumer adoption of e commerce in a developing country like India is based on an analysis of prior research into the factors that act favorably towards this transition. These factors include the decision maker's age, education level, cosmopolitan outlook, perceived compatibility, cost, customer pressure, and perceived relative advantage (Ellis 2004). Boateng, Molla, and Heeks segmented these using five factors including technology, managerial,

organizational, cultural, and environmental (Richard Boateng 2012). Karimov observed that underdeveloped telecommunication systems, legal framework, infrastructure, and economic and socio-cultural factors act as a hindrance to the adoption of e-commerce in developing nations (Karimov 2011). Currently, most urban areas in India have e-commerce coverage and their growth has led to cost efficiencies for e-commerce companies.

In order to observe the factors contributing to Flipkart's success, we used data from the Census of India for 2011 (Office of the Registrar General & Census Commissioner 2014) and The Economist Pocket World in Figures 2014 Edition (mostly 2011 data) (Economist, Pocket World in Figures 2014). In order to determine the factors leading to Flipkart's success, we collected demographic data in areas initially penetrated by Flipkart.

Additionally, we ran a correlation analysis of Flipkart's revenues and factors such as changes in government expenditures to improve quality of its citizens (measured by GDP per person employed PPP), rate of internet usage (measured by internet users per 100 people). Literacy rates (measured by gross secondary school enrollment), and size of the population.

Data Analysis

Data analysis is a process of bringing the meaning, structure and order to the mass collected data. It is one among the fascinating, creative process that is little time consuming, messy and ambiguous in nature. Data analysis requires sort of logics that are applied to the research.

Interpretation and logic apply to the research analysis includes inductive and deductive logic to the research. Interpretive approach is a part of qualitative approach that has involved deductive for of obtained data. This study mainly relies on the action of participants under study. The researchers are mainly relying on the information provided in the subject. Mixed method of thesis includes data collection method that can be named as combination of quantitative and qualitative method of data collection.

Analysis of Quantitative Data

Quantitative analysis helped the researcher to get the fresh information about the topic and various views have been obtained. 18 questions had been prepared for the survey and asked to every respondent to get the information. For the survey 103 random customers have been selected and were provided with the research questionnaire for collecting primary information using MS word and MS Excel for storing the same.

Satisfaction Level of Customers on Shopping Experience with Amazon:

Good	55.7%	59
Excellent	34.9%	37
Above Average	6.6%	7
Average	2.8%	3

According to the Primary Data:

- 55.7% of the people were having excellent experience on purchasing with Amazon.
- 34.9% of the people were having a good experience on purchasing with Amazon.
- 6.6% of the people were having an Above Avg experience on purchasing with Amazon.
- 2.8% of the people were having an Average experience on purchasing with Amazon

Comparison of Service Performance at Par with the Competitors:

Website performance	25.5%	27
Product catalog	8.5%	9
Products information	16%	17
Pricing	20.8%	22
Shipping options	14.2%	15
Payment experience	2.8%	3
Online Help overall	12.3%	13

From the response we can conclude that 25.5% of people are considering website and very percentage of people i.e, 8. % people consider product catalog as the competitors

Summary of Findings:-

- The research reveals that the most of the respondents are student's i.e. about 79.2%.
- From the study it is evident that most of the respondents are recommending to purchase in amazon.
- Most of the respondents are having good experience with amazon products.
- From the study it is found that 73% people are receiving their products on the expected time
- More than 50% of the respondents are have good experience on purchasing with amazon.

Suggestions

- It would be better if Amazon will improve the quality of other items so as to increase customer.
- If Amazon would provide different designs and variety of products, they can gain more no. of customers and can easily satisfy them.
- They should add some more design, it will be better for the company.
- According to respondents, if company improve the promotion activities in order to get more consumers, like through pamphlets, news, especially to rural area because now a days companies are targeting them more.
- Company should look towards its quality product as it is more important to attract customers.
- They should add some offers with the products in every quarter so as to gain more and more no. of customers.

Conclusion

Given the importance of e-SCM and the impact it has on enhanced competitiveness from the ceaseless integration within a network of organizations has intrigued numerous researchers to examine this topic as well as many businesses to undertake this execution and prove the benefits of the merge on the Internet with SCM to their everyday business. The main subject of this paper was the benefits of adopting e-SCM practices in terms that it contributes to creating a competitive advantage. After defining and giving insight into the e-SCM we have discussed the status of the organizations that have implemented e-SCM and are working with this concept.

Improved communication among partners, information sharing and synchronization, cost reduction, smooth production flows, shorter cycle times, reduced resources, and overpassing barriers of time and space leading to improved customer satisfaction are all among the benefits of adopting e-SCM. Both real-world's examples, as well as second-hand research data, were used to prove the paper's goal that the adoption of e-SCM practices provides numerous benefits enabling organizations to work effectively and efficiently and thus build competitive advantage. The positive benefits of integrating the Internet into supply chain management outweighs the risks and associated costs as innovation and technology incorporation into how business is conducted has become essential and indispensable nowadays.

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Chapter - 10

A Case Study on Material Handling System at Bosch Limited

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Introduction

Material handling is an integral part of every industry. It is an essential component of any successful warehouse and efficient manufacturing process. Material handling can improve customer service by making products easy to find, move, and ship out, cut costs by reducing the amount of time spent moving the products and reduce product damages by properly transporting your products. It also ensures increased safety from permanent and temporary disabilities. In the existing modern industrial scenario, it is important use efficient and effective material handling system. The integration of different improved Technologies will resulted in to modern sophisticated Material Handling System (MHS) which blends new material handling and transportation equipment with efficient material handling procedure and process along with system control using computer software.

The study has been carried at Bosch Rexroth (BRJP) located in Tsuchiura, Japan is recently suffering from fluctuations in customer demand due to delivery performance to sustain competitive in the market the main cause found to be problems faced with material handling process. The company identifies new concept in MHS and effectively implemented the same in their plant and subsequently the same will be practiced at different plants of Bosch located at various places globally. Boach in India has 14 different manufacturing facilities in India and Boach Bidadi plant adopted this MHS.

The study reveals the effective implementation of the new defined MHS in Bidadi plant, near Bengaluru. The study is to identify the effective implementation of MHS in the plant there by identifying the integration of Men, Machines and Materials for the enhancement of overall plant productivity confined with respect to Material Handling Analysis, the

required data were collected for the analysis through the observations, secondary data and the primary data collected with different sources.

About the Plant

Bosch, a leading supplier of technology and services, inaugurated its 14th manufacturing facility in India. The plant is located at Bidadi, Ramanagara in the state of Karnataka and will manufacture products for the Diesel Systems division. It will be part of Bosch Limited, the flagship company of Bosch in India. The state-of-the-art manufacturing facility in Bidadi will produce Diesel products that were previously manufactured at the Adegudi plant, and would have over 2,600 associates working at the facility. Like the previous location, the new plant in Bidadi will continue to be the lead plant for the production of single cylinder common rail pumps along with conventional fuel injection pumps.

Material Handling System

Modern Material Handling System enable cost effective, in-time effective and efficient material handling at level of an industry. Modern MHS comprises of the following:

- ❖ Random and independent movement of the work parts between the work stations.
- ❖ Handle varieties of work part configurations
- ❖ Facilitate Temporary storage
- ❖ Convenient access for loading and unloading work parts
- ❖ Compatible with computer control

Material handling is the short-distance movement of goods either within a building or between a building and a transportation vehicle. It includes activities such as loading and unloading trucks, placing individual items on pallets to make unit loads, retrieving products from shelves to be shipped out, and much, much more.

Material handling takes place throughout the supply chain. Raw materials must be received before they can be used to manufacture finished products, which then need to be moved and prepared for shipment. They are consolidated into units and loaded onto trucks for transportation. Once they arrive at warehouses, they must be unloaded, processed and placed on racks for storage. And finally, when they are needed, they must be taken out of storage and prepared for distribution.

Materials need to be handled carefully at every step of the supply chain

to make sure they arrive at their destinations intact. A material handling system should be put in place to optimize the movement of goods and materials around manufacturing and storage facilities.

A well-designed material handling system can improve customer service, lower costs and reduce the risk of accidents and damage. With a material handling system in place, products will be easier to find, orders will be filled more accurately, and there will be fewer or nil worker accidents and injuries.

The 10 Principles of Material Handling

- **Planning:** All material handling operations should be carefully planned to optimize efficiency.
- **Standardization:** The methods, equipment and software needed for material handling should be standardized without compromising flexibility.
- **Work:** Material handling work should be simplified as much as possible to improve productivity. Unnecessary movement should be eliminated by shortening routes, moving multiple products together, etc.
- **Ergonomics:** The capabilities and limitations of humans should be considered when planning material handling tasks and ordering equipment in order to protect worker safety.
- **Unit load:** Individual items should be consolidated into unit loads (e.g. on pallets) to optimize movement efficiency.
- **Use of space:** Use all available space effectively and efficiently. Keep storage areas organized and make the most of vertical space.
- **System:** All material handling activities should be coordinated to form a single integrated operational system.
- **Automation:** Material handling operations should be automated or mechanized wherever possible to improve efficiency and worker safety.
- **Environment:** Material handling systems should be designed with environmental impact and energy consumption in mind.
- **Life cycle cost:** Material handling equipment and systems should undergo thorough economic analysis that accounts for their entire lifecycle.

Material Handling is of Absolute Importance Due to Several Reasons:

- Different studies of the past pertaining to different industries

indicated that the handling costs alone accounts for ~20-25% of the entire manufacturing costs, as the result of use of methods and equipment.

- It is generally found that each part component is handled about 50 times, passing through the manufacturing chain. Usually, about 59 tons of materials are handled for every single ton of finished goods.
- Material handling ensures increased safety from permanent and temporary disabilities.
- The methodology reduces claims for damages in parts and materials.
- Material handling in the mechanised way relieves the drudgery for men having had busy with man handling jobs.

Objectives of Material Handling

Material handling is of five prime objectives:

- **Reduction in Manufacturing Cost** – Material handling involves 50 percent of the total manufacturing cost and an effectual material handling system can only help reduce this cost. The minimization of handling costs also reduces the overall unit costs directly. The known management theories, such as supply chain management, and JIT production, are closely related to material handling.
- **Increase in Warehouse Capacity** – If the materials have not been stored properly in a warehouse, the facility is majorly wasted that further adds up to the expenditure. Therefore, efficient storage in cubic space as well as floor space is quite necessary. Reduction in aisle space is also equally important to increase the storage space. Nevertheless, in either case, material handling should be effectively used to lessen the warehousing costs of materials.
- **Enhancement in Layout for Waste Reduction** – An efficient material handling rests on a thorough analysis of the material flow among volumes, operations, flow paths and timing. This further seeks the space requirements to be optimized and travel times to be reduced through effective handling system and equipment. This ensures improved productivity.
- **Optimum Utilisation of Equipment** – Expensive equipment mostly fail to operate at full capacity because the material handling system does not allow so. For instance, the rate at which materials are removed or supplied could lead to a drop in the equipment performance by just making it stand idle. With an efficient execution

and control of a material handling system, the equipment utilisation can also be optimised.

- **Increase in Safety** – In an organization, safety is and should be of prime concern. Only an efficient material handling system can contribute directly towards the workers' safety and that of related materials and equipment, leading to reduction in accident costs, material damage, loss of time, and the like.

Material Handling Equipment

Transportation

Material handling often involves moving very large, heavy and/or bulky items. With modern technology, there is a variety of equipment that can be used to facilitate the task and reduce the loads that material handlers need to move manually.

Goods can be moved by cranes, conveyors, forklifts or pallet jacks. They are usually consolidated into unit loads on wood pallets to make them easier to transport. Pallets are platforms with enough clearance underneath to accommodate the forks of a forklift or pallet jack.

Storage

Pallet racks are shelves that are designed to increase storage space while keeping pallets accessible to forklifts and other equipment. They can be used to make the most of vertical space and liberate floor space.

Protection

Industrial packaging plays an essential part in protecting items during transportation and storage. Particularly fragile products may need cushioning and shock absorption systems to keep them intact throughout the supply chain. Medical and pharmaceutical equipment and products often require temperature control. There are companies that provide custom packaging design solutions for specific needs.

Modern Material Handling System (MHS) will be an integrated solution for Right material in Right manner with Right handling process using Right handling equipment moving to Right place in Right time for Right storage or Right loading by Right transportation.



Problems of Material Handling at Bosch

Inefficiency in the current internal material supply system (IMSS) results huge cost and customer dissatisfaction with the company. This inefficiency in the IMSS can be analysed under three main categories; non-fixed assembly schedule caused by suppliers' low delivery performance, material handling inefficiency resulted by high operation cost and massive manual transportation on the shop floor, and lack of information link between material supply and production departments.

Designing a new material supply system is dependent on many different variables, the problem will be narrowed down to decrease its complexity. Hence, design of the new material supply system will only cover the area between internal warehouses and assembly lines, and will exclude the parts related to suppliers and customers. In addition, the study aims to create a pilot design for in-house MHSs with the purpose of increasing delivery performance and decreasing buffer levels on the shop floor. For this reason, a product group that includes every step of material handling process has been chosen to conduct this study.

Furthermore, the research questions will look into the examined area from different perspective in order to demonstrate a clear picture about possible improvements in an inhouse MHS. The in house MHS is about providing the right amount of material, at the right time, at the right place and with the right method, in-plant MHS as a system that has material and information exchanges inside a factory where different departments and features are involved and working together to create value for the end-users. The suppliers and customers are not involved in an in-house MHS. The transportation system of MHS should address

- Proper material and information flow
- Possible lowest operation costs
- On-time and accurate delivery
- Minimize material damage and employee injury
- Reuse of the load-carrying surface
- Material identification at any time

There are nine factors that are essential to be fulfilled in order to eliminate material handling problems from shop floor:

Right Amount: The concept of just-in-time inventory management emphasizes the importance of holding the right amount of material both in manufacturing and distribution.

Right Material: An accurate identification system is necessary in order to pick and deliver the right material to the lines.

Right Condition: The quality of the delivered material should fulfil the desired expectations without damages/defects.

Right Sequence: The impact of the sequence of activities performed in a material handling operation is very evident. Therefore, it is important to move, store, protect, and control materials in the right sequence.

Right Orientation: Physical orientation of materials represents a significant portion of people’s activities both in manufacturing and distribution. Therefore, regaining the orientation of material will save valuable time.

Right Place: The necessary material should be delivered at the point of use which can save undesired movements.

Right Time: The need for the material handling system to move, store, protect, and control materials at the right time is increasingly important due to time-based competition.

Right Cost: Right cost does not necessarily mean that a firm should decrease the cost of MHS. On the contrary, the system should be designed with competitive advantages, so it can be a revenue enhancer rather than a cost contributor.

Right Methods: To perform all the mentioned points above in a right way, it is necessary to use the right methods.

A well-designed MHS production could encounter delays and would improve manufacturing and logistics operations, enhance delivery performance and quality on the shop floor, and also reduce work-in-progress inventories.

Possible Problems and Challenges related to Material Handling Systems:

Problems/Challenges	Solutions
Delivery Precision	By eliminating unnecessary movements of products within the facility, products can be delivered at the right time, at the right place and in the right sequence insufficient MH would cause production delays and increase production times
Inventory Levels	Holding the right amount of material both in manufacturing and distribution Just-in-time inventory management Decreased work-in-progress material

Operation Costs	Ensure possible lowest operation costs the system and should be designed in a way that it can enhance revenue rather than be a cost contributor
Delivery Quality	Quality on the shop floor can be achieved by receiving right material, in right condition, and with right methods
Information Flow	Providing proper material and information flow accurate material identification systems real time information
Safety	Minimize employee injury Protect products from getting damaged or being contaminated

Material handling systems and facility layout are interrelated. Design of material handling systems is directly related to movement of material between the locations in the plant, and facility layout determines these locations; thereby, a flow path design with an existing layout have already loss a degree of freedom in order to attain overall optimal solution. Deciding pick-up and drop-off points is the crucial intersection between two approaches.

Different Approaches/Features in literature related to MHS design

Feature	Approaches
Ideal system approach	Different perspectives of MHS: theoretical, ultimate, technologically workable, recommended, present
Facility Layout approach	Design for each other – Re mapping and Reorder the layout
Distance and Flow features	Material flow path and material attributes Select optimum and easy path if require remap
Six-step engineering	MHS design process
MHS design framework	Hardware, software, human and management sub-systems

Material Handling System Design

Design Principles and Physical Elements There are twenty fundamental guidelines and principles that can be used to effectively plan and control material handling.

MHS Design Principles

Principles	MHS - Action
Planning Principle	Plan all material handling and storage activities in order to achieve maximum overall operating efficiency.
System Principle	Integrate these activities into a coordinated system of operations, including receiving, inspection, storage, production, assembly, packaging, warehousing,

	shipping and transportation.
Materials Flow Principle	Provide an operation sequence and equipment layout that optimizes materials flow.
Simplification Principle	Simplify handling by reducing, eliminating, or Combining unnecessary movements and equipment.
Gravity Principle	Utilize gravity to move material wherever it is possible.
Space Utilization Principle	Make effective utilization of all cubic space.
Unit Size Principle	Increase the quantity, size, or weight of unit loads or their flow rates.
Mechanization Principle	Mechanize handling operations.
Automation Principle	Provide automation that includes production, handling, and storage functions
Equipment Selection Principle	While selecting handling equipment, all aspects like material handling, movement and the used methods should be considered.
Standardization Principle	Standardize the handling methods as well as types and size of handling equipment.
Adaptability Principle	Use the methods and equipment that can adapt to the widest variety of tasks and applications, except where the special methods and equipment are necessary.
Deadweight principle	Avoid unnecessary run of equipment and machines.
Utilization Principle	Plan for maximum utilization of handling equipment and labour.
Maintenance Principle	Plan for preventive maintenance and schedule repairs of all handling equipment.
Obsolescence Principle	Replace the obsolete handling methods and equipment when more efficient ones in order to improve the operations.
Control Principle	Use material handling activities to control the production, inventory and order handling.
Capacity Principle	Use handling equipment to improve production capacity
Performance Principle	Determine the handling performance effectiveness in terms of expense per unit handled.
Safety Principle	Provide suitable methods and equipment for safe handling.

In MHSs environment, several identification and control techniques/equipment are used to collect and communicate the information to coordinate the flow of materials. The human and management are essential factors for MHS designs. The term human refers to employees who will

operate the system; while on the other hand, management refers how we manage the MHS according to time schedules, manufacturing constraints and principles, and so on. While designing or improving a material handling system not only physical elements, but also supportive aspects such as employee involvement and compatibility with the manufacturing system are essential, since they will affect success of the design dramatically.

After design of Material Handling System Bosch, the same will be implemented and the following are the results of few material handling problems were solved,

Challenges	Problems	Solution using MHS
Delivery Performance	Push Material Delivery, Unnecessary movements of materials, Production line stops due to material supply delays, High and unstable throughput time of material supply	By eliminating unnecessary movements of products within the facility, products can be delivered at the right time and place in the right sequence, Insufficient MH would cause production delays and increase production times
Buffer Levels	High buffer levels between warehouses and Assembly, High storage levels on the shop floor.	Holding the right amount of material both in manufacturing and distribution, Just-in-time inventory management, Decreased work-in-progress material
Operation Costs	High operation costs due to forklift running costs, forklift maintenance, forklift driver, and manual transportation	To ensure possibly lowest operation costs the system should be designed in a way that it can enhance revenue rather than be a cost contributor
Delivery Quality	No method standardization in Material Handling steps, Non-value adding activities	Quality on the shop floor can be achieved by receiving right material, in right condition, and with right methods
Information Flow	No information link between warehouses and assembly sections, Non-computerized communication with Papers,	Providing proper material and information flow Accurate material identification systems Real time information

	No real-time information and updates	
Safety	No standardization of material handling equipment, Material Handling System designed without considering ergonomics, Accidents on the shop floor mainly regarding to intensive forklift traffic.	Minimize employee injury, Protect products from getting damaged or being contaminated

The benefits of standardized work process using MHS

Benefits	Description
Improved process performance	Reduced cycle time Reduced process cost Increased process quality
Improved customer confidence	Reduced probability of making mistakes Cope with the increased process complexity Increased performance quality and reliability
Enhance readiness	Increased flexibility to regularly changes
Simplified and increased communication/ transparency/ measurability	Simplified communication among departments High transparency of process-activities Flexibility in allocation of employees and performing the tasks due to process standardization

Conclusion

This study established the fact that a MHS consists of three main pillars; design principles and physical elements, information and software, human and management, which are equally important in order to achieve a well-functioning MHS on a manufacturing shop floor. Moreover, based on the comprehensive literature review and case company investigation the existing issues with the traditional MHS (manual transportation & forklift transportation) were identified and categorized as; delivery performance, buffer levels, operation costs, delivery quality, information flow, and safety.

To cope with the mentioned problems above various methods and techniques such as JIT concept, standardized work methods, hybrid pull/push system, AGV system, and etc. were suggested. However, the core element in an effective and efficient MHS was pointed out as real-time information sharing. The latter fact enables companies to rapidly react to different requests and changes on the shop floor area; and thereby, to obtain increased delivery

performance and decreased buffer levels. It was also clearly argued that by integrating information technology with production processes many undesirable material- handling activities could be easily avoided, in addition, the companies would be able to attain increased space efficiency on the production/assembly area and decreased work in process (WIP). Another vital element in developing a new MHS was pointed out as interaction between the new system and its surroundings, particularly, the interaction between the system and people, who are utilizing and operating the system. Therefore, employee involvement and employee training was mentioned as a key component for achieving an effective and efficient MHS.

Organizations already have been realized that without employee involvement the success of any system implementation is almost near to zero. However, these needs and contributions should be addressed and defined in earlier stages in order to attain the best outcome of the developed system. On the other hand, companies should not forget the importance of management involvement and support in all stages from design to implementation of a MHS, both in functional and physical levels.

The MHS which was practiced at Bosch Rexroth (BRJP), was a success story and the same MHS is implemented at Bosch plant at Bidadi, again the results in to huge success, by this new MHS practices the overall Organisation productivity of the plant has been increased. The company able to achieve many more Rights things in its performance.

The study also revealed that the main benefits gathered from the new MHS could be enumerated as higher delivery performance, lower buffer levels, decreased operation costs, enhanced real-time information sharing, increased delivery quality and safety. In addition, it was shown that these benefits could be more fruitful, if the variability within the MHS processes could be eliminated or decreased. For this purpose, JIT concept and standardized work methods were proposed in order to visualize the ineffectiveness and inefficiency within the MHS processes.

Further the New Material Handling system could be much more effective by adding the concept of RFID, IOT as well as AI concepts, which could improves the performance and productivity of the material handling system.

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Chapter - 11

Export Performance of Marine Products from India: A Study with Special reference to Kerala

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Abstract

India is the world's second largest producer of food and has further potential to grow in this sector. Fish and marine products are the important items as a food constituent and with about 8041 km of coastal line, 3 million hectares of reservoirs and 1.4 million hectares of brackish water, the country has vast potential for fish both from marine and inland sources. India is the 6th largest producer of fish & 16th largest exporter of marine products in the world. Further, India is the 2nd largest producer of inland fish in the world. This sector is of immense importance to the country due to employment generation capacity and export potential. Out of total Indian exports, the share of Seafood exports is 3.32%, however, it is the 4th largest contributor to the net foreign exchange earned by the country.

Introduction

Till the end of 1960, export of Indian marine products mainly consisted of dried items like dried fish and dried shrimp. Although frozen items were present in the export basket from 1953 onwards in negligible quantities, it was only since 1961 the export of dried marine products was overtaken by export of frozen items leading to a steady progress in export earnings. With the devaluation of Indian currency in 1966 the export of frozen and canned items registered a significant rise. Frozen items continued to dominate the trade. Markets for Indian products also spread fast to developed countries from the traditional buyers in neighboring countries.

Objectives

1. To study the growth of marine production in India from 2009 to 2021

2. To analyze the export performance of marine products in India
3. To know the composition of marine product exports in India.

Need For the Study

India is endowed with vast and varied resources for aquaculture and capture fisheries. In 2021 she occupies in the 4th largest producer of marine products in the world and 2nd largest producer of the inland fisheries. Exports mainly depend upon the demand and supply conditions. Most of the studies are done only based on the industries, but this study predicts the export prospectus of various types of fish products into different markets taking consideration of all the relevant factors.

Methodology

The study pursued with the secondary data drawn from various published sources. Data relating to fish production and exports are compiled from the information given in year book of statistics of MPEDA and marine product exports review, published by MPEDA, Cochin, and Web Page.

Data Analysis

Table 1: Marine Fishery Sources in India

Si	State/union territory	Length of coastal lines	Continental shelf(1000 sq.km)	No.of landings	No.of fishing villages
1	Andhra Pradesh	974	33	508	508
2	Goa	104	10	88	72
3	Gujarat	1600	184	286	851
4	Karnataka	300	27	29	221
5	Kerala	590	40	226	222
6	Maharashtra	720	112	184	395
7	Orissa	480	26	63	329
8	Tamil Nadu	1076	41	362	446
9	West Bengal	158	17	65	652
10	Andaman&Nicobar	1912	35	57	45
11	Daman & Diu	27	-	7	31
12	Lakshadweep	132	4	11	10
13	Pondicherry	45	1	28	45
	Total	8118	530	1914	3827

Source: Government of Karnataka, Department of Fisheries, Statistical Bulletin of Fisheries.

Table 2: Major Export Item

Items	Qty. in Ton	Value in Crore	Us \$ Mil
Frozen shrimp	136059	4051.36	987.31
Frozen fish	220198	1269.27	310.32
Frozen cuttle fish	46437	746.14	182.95
Frozen squid	36578	432.67	103.32
Dried item	23434	244.24	59.51
Live items	2521	67.71	16.35
Chilled items	7016	119.83	29.49
Others	66754	693.67	167.92
Total	538997	7624.89	1857.17

Among all the export items frozen shrimp stands at the top most position with the 136059 tones In terms of quantity and Rs.4051.36 crores in terms of value. Though the export of shrimp in quantities is lesser than the export of frozen fish which has 220198 tones in terms of quantity frozen shrimp occupies the highest market value than the frozen fish.

Table 3: Share of Marine Products Exports from Overall Exports of India

Year	Total Exports		Marine Products Export		
	RS	US\$	RS	US\$	SHARE%
2009	141604	33877	4627	1107	3.27
2010	162925	37863	5117	1189	3.14
2011	201356	44257	6444	1416	3.18
2012	207744	43769	5917	1253	2.85
2013	255137	52823	6881	1425	2.7
2014	291582	65278	6091	1331	2.04
2015	313349	66450	7054	1453	2.08
2016	315124	67101	6936	1433	2.03
2017	303567	64958	6771	1410	2.10
2018	290810	62205	6685	1397	2.22
2019	291841	62470	6723	1407	2.23

Table 3 illustrates the share of marine Products exports from overall exports which is undertaken in India for the period of 2009 to 2019.among the stipulated period the highest total exports is made in the year 2006 with 315124 crores from that the share of marine products export is 6936 crores and the share percent contributed is about 2.03% of that year the lowest exports is made in the year 2009 with 141604 crores in which the share of marine products export is about 4627 crores and with the share percent of

3.27% in which the major share is contributed from marine exports among all other exports. The lowest contribution of marine products to the overall exports is made in the year 2016 but which shows with the highest value of total exports. the highest rate of dollar value is attained in the year 2015 with the total exports of 313349 crores and in which marine exports has the value of rs.7054 crores with overall exports dollar value is 66450 crores and dollar value as for the share of marine products is 1453 crores.

Table 4: Port-Wise Export of Marine Products from India

PORTS	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
CHENNAI	Q 2557 : 1	3417 7	3954 5	5367 7	4445 76	4493 9	4431 0	4197 1	4419 7	4294 7	3904 3
	V 1010 : .94	1666 .56	1576. 33	2034 .92	1534 .30	1469 .52	1412 .62	1312. .58	1249 .27	1158 .50	1078 .44
	\$ 236. : 1	369. 03	334.9	421. 17	329. 42	324. 03	323. 29	289.4 9	303. 25	287. 87	240. 80
KOCHI	Q 8342 : 2	9667 8	6917 1	8583 2	7307 1	8629 7	9581 8	1040 16	9525 0	9852 0	9853 7
	V 959. : 87	1159 .56	900.4 3	1088 .13	1039 .87	1151 .73	1206 .94	1421. 63	1373 .90	1383 .74	1504 .98
	\$ 224. : 01	259. 13	191.8 6	225. 72	223. 65	257. 41	275. 45	313.6 5	336. 34	344. 45	335. 35
VIZAG	Q 2274 : 4	2382 5	2134 3	2571 5	2299 9	3047 5	3573 4	3800 5	3398 5	3553 5	3227 7
	V 869. : 82	980. 26	764.6 6	918. 48	715. 02	978. 29	1076 .70	1296. 08	1046 .10	1018 .60	897. 93
	\$ 202. : 9	217. 22	162.2 9	190. 09	154. 32	215. 45	245. 37	285.5 4	254. 37	253. 66	199. 85
JNP	Q 5157 : 8	7840 8	9814 3	1230 34	9526 8	1022 32	1240 80	1372 67	1060 88	1046 70	1268 53
	V 399. : 59	601. 34	692.9 9	972. 64	842. 25	892. 67	1175 .70	1284. 37	1129 .54	1120 .86	1487 .28
	\$ 93.3 : 9	133. 98	148.1 8	202. 11	182. 16	196. 95	267. 36	284.2 0	274. 39	279. 25	329. 52
TUTICORIN	Q 1691 : 0	1863 8	1561 5	1789 2	1984 4	2776 4	2647 6	3159 6	2844 1	2969 7	2935 4
	V 374. : 49	511. 62	439.1 5	442. 23	507. 21	656. 69	591. 05	756.6 8	632. 32	654. 64	693. 76
	\$ 87.3 : 8	113. 64	93.29	91.6 3	109. 28	144. 64	134. 89	166.7 1	153. 64	162. 97	153. 59
PIPAVAV	Q 194 :	3804 7	6975 6	9583 7	9246 7	1060 66	1063 27	1719 14	1540 66	1497 34	1638 66
	V 0.77	178.	326.2	483.	497.	582.	707.	1128.	1078	1075	1408

	:		15	2	85	16	37	46	40	.68	.31	.35
	\$	0.18	39.3 6	69.44	100. 59	106. 95	128. 87	160. 06	250.7 3	261. 75	268. 79	307. 69
CALCUTTA	Q	1690	1888	1764	1728	1770	1742	1871	2215	2666	2766	3362
	:	1	0	7	6	2	3	2	8	6	6	5
	V	513.	619.	503.9	570.	542.	497.	548.	660.2	660.	689.	720.
	:	84	65	1	52	12	17	39	6	00	70	36
	\$	119.	137.	106.6	118.	116.	109.	124.	145.1	162.	172.	159.
	:	96	23	7	09	88	51	98	6	17	06	96
MUMBAI	Q	1918	2710	1151	5380	1977	2393	3368	2859	2413	2383	2319
	:	4.5	2.4	8.97	.61							
	V	179.	242.	140.4	71.1	47.1	66.8	75.4		97.8	116.	176.
	:	32	88	3	1	9	5	1	63.14	8	12	56
	\$	42.0	54.6	30.22	14.7	10.1	14.7	17.1	13.99	24.0	29.1	38.6
	:	2	4		6	3	8	1		3	4	0
MANGALORE/ICD	Q	49	3277	4952	1108	8807	9372	1576	2481	2454	2615	3308
	:				1			7	2	6	5	3
	V	0.14	16.5	41.45	66.1	69.3	66.9	106.	138.5	146.	162.	238.
	:		9		2	7	5	59	2	66	61	44
	\$	0.03	3.66	8.79	13.7	14.8	14.7	24.3	30.53	35.7	40.6	52.8
	:				4	5	4	4		2	5	1
GOA	Q	9391	1120	7465	1811	1005	9346	1106	1509	1826	1929	2114
	:		6		3	1		2	0	7	7	6
	V	36.7	34.9	28.31	59.1	30.5	40.1	56.7		93.3	111.	185.
	:	2	1		0	2	3	2	83.79	6	22	16
	\$	8.59	7.81	6	12.2	6.67	8.83	12.9	18.37	22.8	27.8	42.0
	:				6			4		8	0	4

Table 4 depicts the port wise exports of marine products from India from 2009 to 2019. as per the quantity aspect the largest number of exports are done from the kerala ports in 2009 with 83422 metric tones and it has been increased subsequently over the further years. thus in 2019 also the kochi port occupies the first position for huge exports 98537 metric tones. the lowest exporting port under the above mentioned ports is Mumbai port which had shown with a downward trend in exports from 19184 metric tones in quantity aspect in the year 2009 to 2019 metric tones in quantity aspect in 2009.

Findings from the Study

1. Seafood is labour intensive industry but educated youth do not want to work under this sector due to manual work requirements. India has the advantage on labor. However India has not been found to be suitable location for starting seafood processing Centre by advanced countries like Japan despite having the major requirement of skilled,

plentiful, competitively priced seafood processing labour force.

2. International markets are becoming more & more health & environment conscious. Thus they impose stringent quality standards for food items. during the last few years, most of the seafood units have lost money due to strict import laws imposed by various countries like USA, Saudi Arabia etc.,
3. They undergo with a problem of infrastructure like lack of hygienic landing Centre's, fishing harbors, modern equipment. Most of the plants are old and built before the new standards were made. Apart from that a large amount of the catch goes waste every day because of poor facilities at the landing Centre and long transportation periods due to poor infrastructure facilities.

Suggestions

1. Proper awareness regarding the performance and the benefit out of the marine sector must be made known to the public which creates the interest among the youth and their concentration to towards these kinds of industry thus it would enhance to the growth of this sector.
2. New equipment have to be installed and workers are to be trained to proceed in new lines. Thus it will enable the fisher men to attain their target through major capture of fisheries.
3. Government of India must know the needs of seafood industry provide with the maximum assistance to them in all aspects like infrastructure, warehouse, hygienic landing centre etc, which improves the export of marine products to a larger extent as through the assurance of quality and hygienic exports which is required by the foreign countries.
4. While making the exports at times huge losses occur and bring losses to the exporters .this is mainly due to the export of diseased seafood items and many exporters come to know about this disease problem only after they export. Thus To overcome this disease problem, government should help the farmers through disease free seafood seed supply.

Conclusion

The expansion and diversification of trade among developing countries play an important role in their overall economic development India's agriculture export is widely diversified which includes agricultural crops, plantation crops, animal husbandry, forestry, and processed items. Besides

these a large number of “food items” account for 85 percentage of agricultural export including 16 percent of marine products. The marine product sector has a proud place in the national economy. The supplies food for millions of people all over the country. This sector is regarded as a powerful income and employment generator as it stimulates the growth of number of subsidiary industries. Although marine fishing has been a traditional occupation, the recognition that the activity has gained in the economic front is largely due to the remarkable achievement on the export front. Our country stands the eight largest producers of the marine products with the world share more than 3 per cent. At the same time, monetary value of export has increased more than threefold during the last decade, which shows that the government earns considerable foreign exchange from marine products.

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Chapter - 12

Cluster Units in Export Garment Industry: SWOT Analysis

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Abstract

The garment industry is crucial to a nation's trade, GDP, and employment, and it has had a considerable impact on the economies of many nations. For many nations, the clothing industry offers prospects for expanding and diversifying manufactured exports. The Indian economy heavily depends on the clothing industry. After China, India is the second-largest manufacturer of textiles and apparel worldwide. It has advanced significantly over time, not only in terms of its contributions to industrial production, exports, and employment creation, but also in terms of achieving a high level of sophistication, quality upgradation, cost reduction, and standardisation that can withstand fierce international competition. A SWOT analysis takes into account four different factors. The first "strengths" section considers internal qualities that will advance the corporate goal. The second section, "weaknesses," lists potential weak spots under the company's control that might have a negative impact. This study focus on the SWOT Analysis for cluster units in export garment industry.

Keywords: Cluster Units, Employment, SWOT Analysis, Garment Industry.

1. Introduction

A SWOT analysis covers four areas of consideration. The first "strengths" takes into account internal attributes that will positively affect the business objective. The second area, "weaknesses," identifies potential weak-links within the company's control that could contribute to a detrimental outcome. The third category, "opportunities," analyzes external conditions that favor end-goal achievement. Finally, external "threats" that are beyond the company's control face evaluation.

1.1 Indian Garment Industry

Garment industry is very important for a country, in terms of trade, GDP and employment and has contributed significantly to the economy in several countries. Garment industry provide opportunities for export diversification and expansion of manufactured exports for many countries. Garment industry plays a veryimportant role in Indian economy. India is the world's second largest producer of textiles and garments after China. It has made significant progress over the years not only in respect of its contributions to industrial production, exports and generation of employment but also in achieving a high degree of sophistication, quality up gradation, cost reduction and standardisation capable of withstanding stiff international competition. India is now the strategic choice, with a vertically integrated, flexible and comprehensive production infrastructure. Skilled labour, production-friendly systems and stable economic environment helped India to deliver wide varieties and huge volumes for the global market. The Vision Statement for the textiles industry for the 11th Five Year Plan (2007-12) sees India securing a 7 percent share in the global textiles trade by 2012. At current prices, the Indian textiles industry is valued at US\$ 55 billion, 64 per cent of which caters to domestic demand. Total textile exports during April-March 2010-11 stood at US\$ 12.5 billion as against US\$ 11.3 billion during the corresponding period of the previous year, according to the data released by DGCI&S, Kolkata. The technical textiles segment is expected to grow by 11percent per annum till 2012-13 and is likely to grow at 6-8 per cent per annum till 2020 without any policy interventions. If the government intervenes by way of regulatory push, the growth of technical textiles industry can be estimated at 12-15 per cent per annum till 2020, according to Rita Menon, Secretary, and Union Ministry of Textiles. She added that the technical textiles segment in India has the potential to attract investment and create additional employment opportunities in coming years. She further said that investments of US\$ 1.1 billion are expected by 2012 and employment is expected to increase to 1.2 million by 2012.

1.2 Tirupur Garment Industry

Tirupur has nearly 1500 exporting firms, which symbolises the spirit of entrepreneurship in the country. Tirupur has emerged as a town, which is synonymous with knitwear, and export culture and is rated as the most important potential future growth by the leading global markets. Tirupur's performance in Textiles originates from its performance in technology and the quality of its macro-economic environment. It also derives much of its ascent from improved perception of its public service. Buyers from 35 countries

frequently visit Tirupur. Tirupur can deliver customized samples in less than 12 hours; half a million pieces in a matter of days. 56% of India's total knitwear exports come from Tirupur. This has been recognized in the Export Import Policy, 2002-07 of Government of India which conferred the status of 'Town of Export Excellence' to Tirupur. The rich availability of Raw materials, being in close proximity to Coimbatore which is a major centre of cotton spinning industry in the Country makes Tirupur being able to access its basic raw materials quickly and as and when required. The strong entrepreneurial skills and personalized management contributes to efficient management of negotiations and direct control of operations causing cost effective competitiveness of the Industry; quick delivery and quality products add dimension to the Tirupur's prowess as a centre to outsource excellent products.

Cluster

Cluster is a term used by everyone in the industry to describe work (a 'job') shared by firms specializing in different processes, within firms between different units Specializing in different processes, or to refer to contract work organized through traders. These arrangements can be considered structurally, but they can also be considered as a social relation of production where by owners of firms are able avoid problems associated with the direct control of large labor forces. Thus:

- * "Out contracting" takes place between firms specializing in different processes and enables firms to make choices about the extent to which they vertically integrate parts of the production process
- * "In contracting" has developed within some of the larger firms where an owner(s) employs a "job work contractor" for each unit. The contractor acts as a production manager who is also responsible for employing labor for a particular "job". This system again sets up process divisions, but this time within a firm (Cawthome, 1995:47).

The horizontal and vertical networking is complex and dense. Some patterns can be discerned. The entrepreneurs grouped into three categories: namely, exporter-manufacturers, non-exporter manufacturers and merchant exporters. However, they further suggest that:

- (a) In each of these categories there are large, medium and small firms;
- (b) The export-manufacturers and the merchant exporters who dominate the scene control (formally and informally) a variety of enterprises spanning the industry both horizontally and vertically;

- (c) The non-exporter manufacturer category includes both those producing for exporters (and hence strictly speaking sub-contracting units) as also those producing exclusively for the domestic market.

The need to stick to delivery schedules and maintain internationally acceptable standards in quality, finish etc., has had its own impact on the manner in which production is organized. It has not led to all operations being brought under one roof. The large exporter-manufacturers and merchant exporters teamed up with several enterprises covering different segments of the production process. The mutual exchange of information and assistance provided (if necessary) between the members of the team (in technology, market on the one hand, and expertise relating to the different processes on the other) enables each of the segments to operate at internationally acceptable standards of production.

1.3 Tirupur Cluster

Tirupur can be easily classified as an industrial cluster that typifies an organic relationship between firms, both horizontally and vertically. This is because of the dense network of production organization that exists within the region. The production of garments in the cluster is segmented into separate modules and firms participate in different portions of the value chain. Everywhere in the small town one can easily notice how activities revolve around the production and sale of knitwear garments. There are a large number of suppliers selling different grades of yarn and these yarns are procured by producers to initiate the production process. Most of the garment producers or exporters generally confine to stages such as cutting, stitching and finishing activities and get the prior stages done by specialized firms. The first stage can be termed as fabrication or knitting. The knitted fabric is then sent to processing units which include operations such as mercerization, dyeing and compacting. Printing is the next stage in the production process. This is done after the garments are cut according to specific designs by the exporting firm. In most of the cases printing job is outsourced but in some cases the exporting units do the printing job in house. The final stage is the CMT process comprises of cutting according to the pattern and there after stitching.

I. Review of Literature

Survey of India's export potential of textile and made-up garments conducted by economic and scientific research foundation (1969) points out the woeful share of India in global garment trade due to poor technology and marketing. The survey recommends for special scheme for improvement in those areas. Jaitley, 2003 has stated that India's export growth rate of 18 %,

next to that of China with 22 % was the second highest among the top 30 leading exporters in world merchandise trade in 2002. Veembur, 2004. has studied that from 1990 to 2003, the average growth rate of Indian textile and apparel production was 5 %. Furthermore, this figure has been predicted to be as high as 15 % after 2005. Cawthorne, (1995). "Tirupur is a textiles town par excellence. It lies in the heart of a cotton producing area. It has a long history as a processor of raw cotton, as a center for handloom weaving and as a cotton trading center. Its cotton exchange traditionally set the price of raw cotton in the state of Tamil Nadu. Moreover, 84 percent of factory industry in Tirupur is textile related. According to Swaminathan & Jayaraman (1994), Tirupur's direct knitwear exports in 1993 were worth nearly US\$ 500 million; whereas if indirect exports are also included (taking note of exports of Tiruppur made garments sold through Bombay and Delhi based traders and producers), this figure jumps to over US\$ 900 million.

II. Methodology

Having identified the unique nature of the garment industry with regard to the variable decision-making process and special significance in the Indian economy, the study focused on the direction and composition of garment industry. The heart of the garment industry belongs to cluster which is the parallel production process. The undisputed advantage of India with regard to the plentiful availability of resources on the one side and the demanding quality and the depressing price on the other side called for a scientific enquiry in to the cluster units in Tirupur. The methodology was formulated keeping this in mind. SWOT analysis is conducted to identify the strengths, weaknesses, opportunities and threats before proceeding to the formulation of long- and short-term strategy. This article seeks to identify the SWOT variables through descriptive study, a structured interview schedule has been framed and 477 cluster units were surveyed by interview method in Tirupur, Henry Garrett scale and multiple regression was adopted for analyzing the strength weakness, opportunity and threat factors.

III. Results and Discussions

In Tirupur city, there are many clusters job works available, as there exists huge order for production, all heavy export-oriented industries provide job works to the ancillary industries and try to complete the export order and earn enough foreign exchange the common job works which are available in Tirupur city was taken for the purpose of analysis viz., 1. Screen printing, 2. Dyeing, 3. Knitting.

Table 1: Type of Cluster Unit Under Taken

S. No	Work	No., of respondent	Percent
1	Screen printing	84	17.6
2	dyeing	266	55.8
3	knitting	127	26.6
	Total	477	100.0

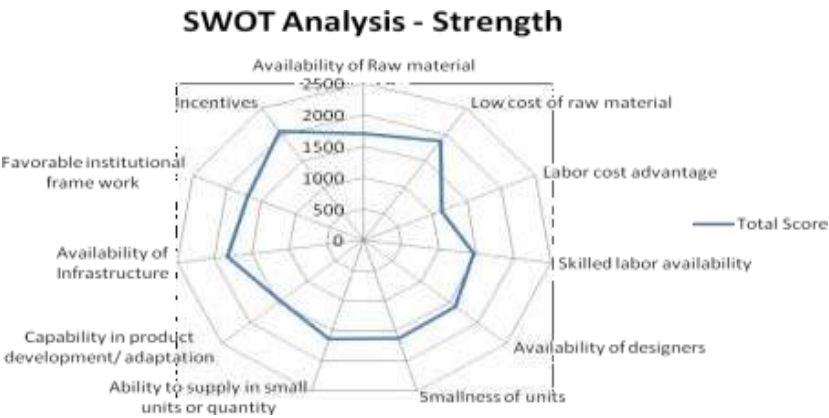
Table 1 details out the type of cluster job work undertaken. From the analysis it has been understood that 55.8 percent of the respondents were involved in dyeing work, 26.6 percent of the respondent were involved in knitting works, and a remaining 17.6 percent of the respondents were involved in screen printing works.

Table 2: Level of Agreement on the Various Strength Factors of the Performance of Cluster Units

S. No	Strength Factors	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	Total Score	Mean Rank
1	Availability of Raw material	456 (26.83)	328 (19.3)	365 (21.4)	328 (19.3)	222 (13.06)	1699	V
2	Low cost of raw material	652 (34.6)	320 (16.9)	219 (11.6)	365 (19.29)	328 (17.40)	1884	II
3	Labor cost advantage	315 (28.02)	321 (28.5)	222 (19.7)	152 (13.5)	114 (10.14)	1124	X
4	Skilled labor availability	480 (32.78)	365 (24.93)	312 (21.3)	216 (14.7)	91 (6.21)	1464	IX
5	Availability of designers	526 (32.85)	425 (26.5)	326 (20.3)	231 (14.4)	93 (5.8)	1601	VIII
6	Smallness of units	492 (30.38)	414 (25.5)	326 (22.14)	235 (14.5)	152 (9.3)	1619	VII
7	Ability to supply in small units or quantity	456 (27.88)	432 (26.14)	362 (22.7)	154 (9.4)	231 (14.12)	1635	VI
8	Capability in product development/ adaptation	426 (29.09)	354 (24.1)	333 (22.7)	136 (9.2)	215 (14.6)	1464	IX
9	Availability of Infrastructure	546 (29.80)	435 (23.7)	514 (28.0)	115 (6.2)	222 (12.11)	1832	III

10	Favorable	544	435	432	126	154	1691	IV
	institutional frame work	(32.17)	(25.7)	(25.5)	(7.4)	(9.1)		
11	Incentives	632	521	542	225	148	2068	I
		(39.56)	(25.1)	(26.2)	(10.88)	(7.15)		

From the above table it could be understood that of the various factors taken for study, The I rank was securedby the factor X11- Incentives with a total score of 2068, The II and III ranks were secured by the factors of X2- Low cost of raw material, X9 – Availability of infrastructure with a total score of 1884, 1832 respectively. The IV, V, VI, VII ranks were secured by the factors of X10- Favorable institutional frame work, X1- Availability of raw material, X7- Ability to supply in small units or quantity, X6-smallness of units with a total score of 1691, 1699, 1635,1619 respectively. The VIII , IX, X,X1 ranks were secured by the factors of X5- Availability of designers, X8- Capability in product development/adoption, X4- skilled labor force availability X3- Labor cost advantage with a total score of 1601,1464, 112 respectively.



Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.820(a)	.673	.665	.77362

A Predictors: (Constant), incentives, skilled labor availability, capability in product development and or adaption, historical back ground of the location & availability of allied industry has facilitated the growth, availability of support services such as banks have facilitated the growth, labor cost advantage, smallness of units, ability to supply in small units or quantity, availability of conducive climate has facilitated the growth, favorable

institutional frame work, availability of water facility has facilitated the growth.

Anova

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	571.528	11	51.957	86.813	.000(a)
	Residual	278.300	465	.598		
	Total	849.828	476			

A Predictors: (Constant), incentives, skilled labour availability, capability in product development and or adaption, historical back ground of the location & availability of allied industry has facilitated the growth, availability of support services such as banks have facilitated the growth, labor cost advantage, smallness of units, ability to supply in small units or quantity, availability of conducive climate has facilitated the growth, favorable institutional frame work, availability of water facility has facilitated the growth

Dependent Variable: type of cluster job work under taken

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.577	.084		6.907	.000
	availability of water facility has facilitated the growth	-.798	.880	-.800	-.906	.365
	availability of conducive climate has facilitated the growth	.319	.351	.321	.908	.365
	historical back ground of the location & availability of allied industry has facilitated the growth	.536	.184	.537	2.915	.004
	availability of support services such as banks have facilitated the growth	-.165	.205	-.166	-.802	.423
	labor cost advantage	.696	.299	.702	2.328	.020
	skilled labor availability	-.036	.186	-.036	-.194	.846
	smallness of units	1.075	.294	1.070	3.655	.000
	ability to supply in small	-.116	.321	-.116	-.362	.718

	units or quantity					
	capability in product development and or adaption	.107	.207	.107	.515	.607
	favorable institutional frame work	.998	.390	.994	2.562	.011
	incentives	-1.796	.974	-1.797	-1.844	.066

Dependent Variable: type of cluster job work under taken

When the multiple regression technique was adopted, it could be understood that all the variables which are taken in to account for analyzing the strength factors shows a positive significance for those cluster units who has taken different job works

Table 3: Level of Agreement on the Various Weakness Factors of the Performance of Cluster Units

S. No	Weakness Factors	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	Total Score	Mean Rank
1	High cost of finance	542 (25.9)	552 (26.3)	421 (20.1)	352 (16.8)	224 (10.7)	2091	X
2	Fluctuating price of raw material	526 (24.9)	554 (26.3)	446 (21.1)	354 (16.8)	226 (10.7)	2106	IX
3	Inappropriate infrastructure facility (Road)	558 (26.3)	552 (26.0)	458 (21.6)	321 (15.1)	228 (10.7)	2117	VIII
4	Inappropriate infrastructure facility (Communication)	635 (34.9)	548 (30.1)	41 (2.2)	365 (20.1)	226 (12.4)	1815	XV
5	Inappropriate infrastructure facility (Water)	621 (28.2)	548 (24.9)	412 (2.2)	366 (16.6)	248 (11.2)	2195	V
6	Inappropriate infrastructure facility (Energy),	531 (25.4)	521 (24.9)	436 (18.7)	354 (16.9)	248 (11.8)	2090	XI
7	Inappropriate infrastructure facility (Logistics)	594 (27.1)	526 (24.0)	435 (20.8)	384 (17.5)	246 (11.25)	2185	VI
8	Small scale nature of industry	621 (28.2)	524 (23.7)	425 (19.3)	348 (15.8)	284 (12.8)	2202	IV
9	Obsolete Technology	638 (28.6)	554 (24.9)	422 (18.9)	364 (16.3)	246 (11.0)	2224	III
10	Absence of branding	548	551	447	354	274	2174	

		(25.2)	(25.3)	(20.5)	(16.2)	(12.6)		VII
11	No incentive	584 (25.6)	553 (24.2)	446 (19.5)	332 (14.5)	365 (16.00)	2280	II
12	Pollution control measures taken by government	594 (25.6)	554 (23.9)	432 (18.6)	451 (19.4)	285 (12.3)	2316	I
13	Lack of professionalism	555 (28.4)	456 (23.3)	451 (23.1)	225 (11.5)	264 (13.5)	1951	XII
14	System of production contributes to the delay in delivery	548 (28.1)	454 (23.3)	432 (22.9)	245 (12.6)	265 (13.6)	1944	XIII
15	Less investment in technology up gradation	458 (24.3)	462 (24.5)	432 (22.9)	284 (15.07)	248 (13.1)	1884	XIV
16	Delay in Delivery	456 (29.6)	441 (28.6)	121 (7.85)	254 (16.4)	268 (17.4)	1540	XVI

When analyzing the various weakness factors, the I rank was secured by the factor X12- Pollution control taken by the government with a total score of 2316, the II, III, ranks were secured by the factors of X11-No incentive, X9- Obsolete technology with a total score of 2280, 2224 respectively. The IV, V, VI ranks were secured by the factors of X8- Small scale nature of industry, X5- Inappropriate infrastructure facility, (Water), X7- Inappropriate infrastructure facility (Logistics) with a total score of 2202, 2195, 2185 respectively. TheVII, VIII, IX and X ranks were secured by the factors of X10- Absence of Branding, X3- Inappropriate infrastructure facility (road) X2- Fluctuating price of raw material, X1- High cost of finance with a total score of 2174, 2117, 2106, 2091 respectively. The XI, XII, XIII, XIV ranks were secured by the factors, X-6 Inappropriate infrastructure facility (Energy), X-13 Lack of professionalism, X-14 System of production contributes to the delay in delivery, X-15 Less investment in technology up gradation respectively with a total score of 2090, 1951, 1944, 1884 respectively. The XV, XVI ranks were secured by the factors X-4 inappropriate infrastructure facility (Communication), X-16 Delay in Delivery with a total score of 1815, 1540 respectively.

SWOT Analysis - Weakness



Weakness Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.221(a)	.049	.016	1.08732

(a) Predictors:

(Constant), delay in delivery, obsolete technology, lack of professionalism, fluctuating price of raw materials, pollution control measures by govt, energy, system of production contributes to the delay in delivery, water, small scale nature of industry, absence of branding, communication, less investment in technology upgradation, road, no incentive, high cost of finance, logistics

(b) Anova

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.047	16	1.753	1.483	.101(a)
	Residual	543.840	460	1.182		
	Total	571.887	476			

(a) Predictors: (Constant), delay in delivery, obsolete technology, lack of professionalism, fluctuating price of raw materials, pollution control measures by govt, energy, system of production contributes to the delay in delivery, water, small scale nature of industry, absence of branding, communication, less investment in technology upgradation, road, no incentive, high cost of finance, logistics

(b) Dependent Variable: form of organization

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.650	.124		21.431	.000
	high cost of finance	-.452	.272	-.547	-1.659	.098
	fluctuating price of raw materials	-.182	.183	-.224	-.993	.321
	road	-.313	.259	-.376	-1.211	.227
	communication	-.137	.211	-.168	-.646	.519
	water	.074	.201	.090	.367	.714
	energy	-.092	.160	-.112	-.575	.566
	logistics	.161	.330	.197	.487	.626
	small scale nature of industry	-.056	.185	-.068	-.301	.764
	obsolete technology	.285	.173	.349	1.652	.099
	absence of branding	.181	.223	.220	.809	.419
	no incentive	.152	.252	.187	.602	.547
	pollution control measures by govt	-.256	.185	-.314	-1.389	.166
	lack of professionalism	.113	.118	.140	.955	.340
	system of production contributes to the delay in delivery	-.022	.146	-.028	-.154	.877
	less investment in technology upgradation	.593	.216	.722	2.739	.006
	delay in delivery	-.118	.112	-.144	-1.050	.294

Dependent Variable: form of organization

When the weakness factor was analyzed with the multiple regression technique it was under stood that all the selected factors were having significance with the form of organization where the job work is undertaken.

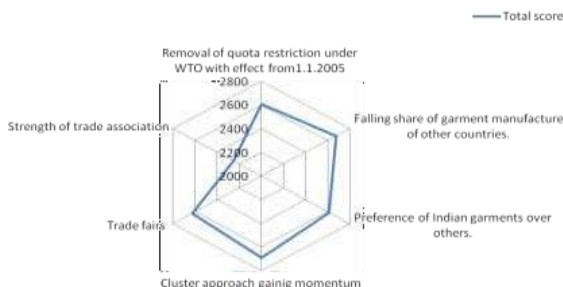
Table 4: Level of Agreement on the Various Opportunity Factors of the Performance of Cluster Units

S. No	Opportunity Factors	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total score	Mean rank
1	Removal of quota restriction under WTO with effect from 1.1.2005	654 (25.08)	548 (21.0)	564 (21.6)	354 (13.5)	487 (18.6)	2607	V
2	Falling share of garment manufactureof	625 (23.3)	652 (24.3)	541 (20.2)	362 (13.5)	495 (18.5)	2675	II

	other countries.							
3	Preference of Indian garments over others.	631 (24.1)	532 (20.3)	532 (20.3)	458 (17.5)	457 (17.5)	2610	IV
4	Cluster approach gaining momentum	668 (24.88)	551 (20.5)	551 (20.5)	465 (17.3)	449 (16.7)	2684	I
5	Trade fairs	658 (29.3)	556 (21.1)	501 (19.0)	447 (17.9)	46.3 (17.6)	2625	III
6	Strength of trade association	662 (29.3)	486 (21.5)	154 (6.8)	468 (20.7)	487 (21.5)	2257	VI

When the Opportunity factors were analyzed with the various factors which are taken in to consideration, the I rank was secured by the factor of X4- Cluster approach gaining momentum, with a total score of 2684, the II and III franks were gained by the factors of X2- Falling share of garment manufacturers of other countries, X-5 Trade fairs with a total score of 2675, 2625 respectively. The IV, V, VI ranks were secured by the factors of X3-Preference of Indian garment over others, X1- Removal of quota under WTO with effect from 1.1.2005 X6- Strength of trade association respectively with a total score of 2610, 2607, 2257 respectively.

SWOT Analysis - Opportunity



Opportunity Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.166(a)	.028	.015	1.08776

(a) Predictors:

(Constant), strength of trade associations, removal of quota restriction under WTO with effect, falling share of garment manufacture of other

countries, preference of Indian garments over others, cluster approach gaining momentum, trade fairs.

(b) Anova

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.775	6	2.629	2.222	.040(a)
	Residual	556.112	470	1.183		
	Total	571.887	476			

(a) Predictors: (Constant), strength of trade associations, removal of quota restriction under WTO with effect, falling share of garment manufacture of other countries, preference of Indian garments over others, cluster approach gaining momentum, trade fairs

(b) Dependent Variable: form of organization

Coefficients

Model		Unstandardized Coefficients		Standardize d Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.571	.120		21.351	.000
	removal of quota restriction underWTO with effect	.196	.148	.240	1.319	.188
	falling share of garment manufacture of other countries	-.129	.220	-.159	-.584	.559
	preference of Indian garments over others	-.476	.235	-.581	-2.027	.043
	cluster approach gaining momentum	.629	.252	.766	2.501	.013
	trade fairs	-.317	.304	-.389	-1.040	.299
	strength of trade associations	.050	.124	.062	.403	.687

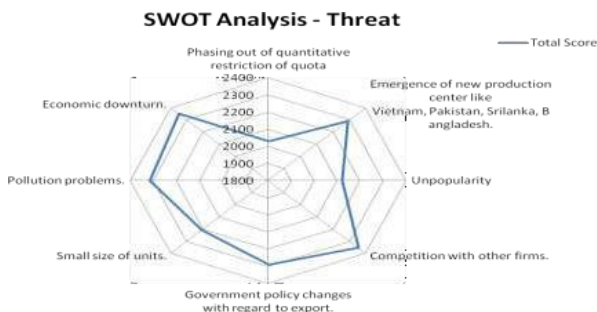
Dependent Variable: form of organization

When the opportunity factor was analyzed with the multiple regression technique it was under stood that all the selected factors were having significance with the form of organization where the job work is undertaken.

Table 5: Level of Agreement on the Various Threat Factors of the Performance of Cluster Units

S. No	Treat Factors	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	Total Score	Mean Rank
1	Phasing out of quantitative restriction of quota	487 (24.01)	547 (26.9)	401 (19.7)	365 (17.9)	228 (11.2)	2028	VIII
2	Emergence of new production center like Vietnam, Pakistan, Sri Lanka, Bangladesh.	569 (24.8)	487 (21.2)	584 (25.5)	384 (16.7)	265 (11.5)	2289	V
3	Unpopularity	574 (27.0)	436 (20.5)	465 (21.7)	367 (17.3)	278 (13.1)	2120	VII
4	Competition with other firms.	598 (25.4)	479 (20.3)	447 (18.9)	465 (19.7)	365 (15.5)	2354	I
5	Government policy changes with regard to export.	546 (23.8)	489 (21.3)	468 (20.4)	443 (19.3)	345 (15.0)	2291	IV
6	Small size of units.	523 (23.6)	548 (24.7)	354 (16.01)	417 (18.8)	368 (16.6)	2210	VI
7	Pollution problems.	518 (22.3)	568 (24.5)	446 (19.2)	446 (19.2)	339 (14.6)	2317	III
8	Economic downturn.	555 (23.6)	497 (21.14)	432 (18.38)	498 (21.19)	368 (15.6)	2350	II

The above table presents the various threat factors of the job workers in Tirupur city. The I rank was Secured by the factor X4- Competition with other firms, the II, III and IV ranks were secured by the factors of X8- Economic down turn, X7- Pollution problems, X5- Government policy changes with regard to export with atotal score of 2350, 2317, 2291 respectively. The V, VI, VII, VIII ranks were observed by the factors of X2- Emergence of new production center like Vietnam, Pakistan, Sri Lanka, Bangladesh., X6- Small size of units, X3- Unpopularity, X1- Phasing out of quantitative restriction of quota with a total score of 2289, 2210, 2120, 2028 respectively.



Threats Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.126(a)	.016	-.001	1.09662

- a) A Predictors: (Constant), economic downturn, govt policy changes with regard to export, pollution problems, emergence of new production center like Vietnam, Pakistan, Sri Lanka, Bangladesh, small size of units, unpopularity, phasing out of quantitative restriction of quota, competition with other firms

Anova (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.086	8	1.136	.944	.479(a)
	Residual	562.801	468	1.203		
	Total	571.887	476			

- a) A Predictors: (Constant), economic downturn, govt policy changes with regard to export, pollution problems, emergence of new production center like Vietnam, Pakistan, Sri Lanka, Bangladesh, small size of units, unpopularity, phasing out of quantitative restriction of quota, competition with other firms
- b) Dependent Variable: form an organization.

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.581	.121		21.323	.000

	phasing out of quantitative restriction of quota	-.077	.246	-.094	-.311	.756
	emergence of new production center like Vietnam, Pakistan, Sri Lanka, Bangladesh	-.005	.139	-.006	-.036	.971
	unpopularity	-.100	.219	-.123	-.455	.649
	competition with other firms	-.249	.378	-.306	-.658	.511
	govt policy changes with regard to export	.243	.110	.301	2.207	.028
	small size of units	.110	.178	.137	.616	.538
	pollution problems	.019	.116	.023	.167	.868
	economic downturn	.017	.111	.022	.157	.876

Dependent Variable: Form of Organization

When the Threat factor was analyzed with the multiple regression technique it was under stood that all the selected factors were having significance with the form of organization where the job work is undertaken

IV. Conclusion

Tirupur Garment cluster units has shown a lofty performance over a long period and has been a back bone for the garment industry to contribute a major share to the country's economy and foreign exchange

. There are certain core issues that require urgent attention of the government. These issues are Infrastructural bottleneck, pollution control, and obsolete technology. Tirupur has well poised in garment industry because of its various strength, Indian government may come forward to take measures with soaring spirit for the pollution control, and provide incentives and drawback to perk up Tirupur from its crisis.

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Chapter - 13

The Influence of Culture on Cosmetics Consumer Behavior

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Abstract

Culture is a pervasive influence which underlies all facets of social behavior and interaction. It is embodied in the objects used in everyday life and in modes of communication in society. Cosmetics are ubiquitous elements of women's consumer culture one of the imperatives of contemporary life, and represent one of the most important ways women present and transform their public persona. In today's society, beauty and physical attractiveness are constantly emphasized as desirable and admirable characteristics. This research focuses on the influence of culture on consumers' cosmetics buying decision making process.

Keywords: Consumer behavior, Cosmetics, Culture, Factor analysis.

I. Introduction

Culture and consumption have an unprecedented relationship in the modern world. The rapidly increasing importance of international marketing has led marketers, practitioners and academicians alike, to seek a deeper understanding of how consumers and markets differ around the globe. The world economy is becoming increasingly cross-cultural. During the next decades, as marketers enter new international markets, an understanding of how culture influences consumer behavior will be crucial. Culture is a powerful force in regulating human behavior.

Consumption decisions made in the market cannot be viewed as an independent event – these are closely related with values and social relationship and cultural allegiance. According to past research, national culture has considerable influence on consumer behavior (Jaishankar, 1998).

National culture of any country, as outer stimuli, influence on the diffusion of products across countries (Kumar et al., 1998). With globalization, culture becomes predominantly important strategic issue in market that has to be faced and properly managed. People of each country possess a distinct „national character“. Countries are a source of a considerable amount of common mental programming of their citizens (Hofstede, 1991). Core values of any country shape its national culture. Culture can be conceptualized as dynamic production and reproduction of meaning by concrete individuals' activities in particular contexts (Kashima, 2000). It ensures a set of behavior patterns transmitted symbolically through language and other means to the member of a particular society (Wallendorf and Reilly, 1983).

Culture generally refers to those aspects of human activities that are symbolic and meaningful and identifiable. Bartlett (1923) defined culture as a part of two components: firstly, cultural elements which denote material behavior and objects and secondly, cultural materials that cover forms of cultural practices, artifacts, social and religious rituals, customs. This article presents a framework that integrates and reinterprets current research in culture, sub culture and cross-cultural consumer behavior. The framework also serves to identify areas that need further research and can be used as a template for those cosmetics marketers who seek to understand their consumers.

II. Literature Review

2.1 Cosmetics

Women use cosmetics to audition various selves (Bolch P.H&SherrellRichins, M.L 1992) and cosmetics matter because they are a means of self-investigation (Beausolil N 1994). A number of studies have addressed the impact of the representation of attractive women on female consumers. The desire to improve one's physical attractiveness seems to be an inherent characteristic of most individuals (Adams, 1977; Etcoff, 1999; Winston, 2003). Cosmetics are traditionally been confined to female consumers, cosmetics have been traditionally used by women to control their physical appearance and, presumably, their physical attractiveness. Although, the literature is by no means voluminous, several researchers have examined the psychological correlates and consequences of cosmetic use (Cash and Cash, 1982; Miller and Cox, 1982; Graham and Kligman, 1985; Cash et al., 1985; Cox and Glick, 1986; Etcoff, 1999). Cash (1980) reviewed some of the available research evidence and, from a self-presentational perspective, argued that cosmetics use specifically and grooming behaviors in general function to manage and control not only social impressions but also self-image (for example, body image, self-perceptions, and mood states).

Since grooming products are considered as a pervasive element of women. As a general result, the exposure to pictures of good-looking and even slightly above-average-looking females lowered the self-image of exposed women and increased dissatisfaction with their own appearance (Pollay, 1986; Myers and Biocca, 1992; Martin and Gentry, 1997; Hawkins et al., 2004).

The body image is an important component of the self-concept and has stimulated the demand of certain products and services, such as dietary, slimming, exercise and cosmetic items (Sturrock and Pioch, 1998). Featherstone (1991) also noticed that the self-preservation of the body pushes individuals to adopt instrumental strategies to combat its deterioration and combine them with the notion that the body is a vehicle of pleasure and self-expression.

In western cultures, one of the commonly recognized reasons women uses cosmetics is to improve their physical attractiveness. For example, Cash and Cash (1982) found women to express a more positive body image and self-image when wearing makeup compared to when not wearing makeup (Cash and Cash, 1982).

2.2 Consumer Behavior

The term consumer behavior is defined as the behavior that consumers display in searching for, purchasing, using evaluating and disposing of products and services that they expect will satisfy their needs (Shiffman and Kanuk, 2010). Consumer behavior focuses on how individuals make decisions to spend their available resources (time, money, effort) on consumption related items, that includes what they buy, why they buy it, when they buy it, where they buy it, how often they buy it, how often they use it, how they evaluate it after the purchase and the impact of such evaluations on future purchases, and how they dispose it. Research in consumer behavior is a top priority for marketers both in the third world (Albaum and Peterson, 1984; Kanwar, 1993) and in Eastern Europe (Kaynak and Samli, 1986). Once a company has ensured both economic and physical access to its products it needs to evaluate the buying behavior of consumers in the country that it is seeking to enter. However, little is known about consumer attitudes, buying habits, purchase motives, lifestyles, etc. in Eastern Europe and Third World countries (Kaynak and Samli, 1986). Marketers who seek to enter these markets might therefore find it necessary to engage in some priority marketing research relating to such issues (Peterson, 1985). Consumers and their behavior represent an important arena for inquiry, which has attracted researchers from several disciplines (Ferber, 1974). Consumer behavior is the active interplay of competing theories (Feyerabend's 1975).

2.3 Culture

Culture has a profound influence on all aspects of human behavior. Its impact may be subtle or pronounced, direct or oblique, enduring or ephemeral. It is so entwined with all facets of human existence that it is often difficult to determine how and in what ways its impact is manifested. Adding to the complexity of understanding the impact of culture is its inherently dynamic nature. Cultural influences change and culture evolves as political, social, economic and technological forces reshape the cultural landscape. Culture is a pervasive influence which underlies all facets of social behavior and interaction. It is evident in the values and norms that govern society. It is embodied in the objects used in everyday life and in modes of communication in society. The complexity of culture is reflected in the multitude of definitions of culture. According to Herskovits (1955) culture is the “manmade” part of the environment – i.e., what distinguishes humans from other species.

Studies have shown that different cultures react differently to new product and technological innovations (e.g., Mahajan and Muller, 1994; Maitland and Bauer, 2001; Takada and Jain, 1991; Tellefsen and Takada, 1999; Tellis et al., 2003; Van Everdingen and Waarts, 2003).

Meanings, values, ideas and beliefs of a social group are articulated through various cultural artifacts, such as products, (Hasan and Ditsa, 1999). Douglas and Isherwood (1979) posit that people from different cultures use products as a means of communication. According to McCracken (1989), in a consumer society, cultural meaning moves from the culturally constituted world (the original location of cultural meaning) to consumer goods (carrying and communicating cultural meaning) and then from these goods to the individual consumer. The nature of cultural influence can be seen as a circular process from which meaning is created, maintained and transmitted within a society (McCort and Malhotra, 1993).

There are over 160 definitions of the culture alone. Basically, the characteristics of culture are identical in almost all the instances. Hofstede (1991), Trompenaars (1993), and Czinkota, M.R. and Johnston, W.J. (1981) all agreed that culture is based on languages, economy, religion, policies, social institutions, class, values, status, attitudes, manners, customs, material items, aesthetics and education, which subsequently influences managerial values.

Cross-verging across culture has different aspects such as attitude, communication, conflict and negotiation, performance and compensation, which explain the ethical issues and how to appraise them.

India, as a country, is so heterogeneous in nature that it is complex for a

marketer to identify common threads of Indian culture and core values. There are many different sub-cultures coexist in Indian society with their own distinctive values, norms, beliefs and behaviors. So, In India, people are socialized by getting input from their cultures and core values.

III. Need of the study

The better understanding of consumers' needs bring growth to the company, along with needs it is important to study culture of the country because, needs are judged within the purview of culture. Therefore, it is most important to understand the culture of the country, for the better understanding of consumer behavior which brings success to any of the company.

IV. Objectives

1. To understand the cultural reasons for the selection of cosmetics.
2. To understand the sub-cultural reasons for the selection of cosmetics.
3. To understand the cross-cultural reasons for the selection of cosmetics

V. Research Methodology

The study uses both exploratory and descriptive research design to get clarity of research problem. The research tool used is Likert Scale and the statistical tool used is Factor Analysis. The sample size was finalized using the formula $n = \frac{z^2 \sigma^2}{H^2}$ with 95% confidence level and 0.05 level of significance. The sample size finally obtained was 1024 and area is Davangere, Karnataka (state), and India. The sampling technique used was probabilistic Cluster Sampling (two stage cluster sampling) using systematic random sampling method. The primary data was collected with the help of a questionnaire from the woman of Davangere. A total of 1200 women from different areas were contacted and aptly filled questionnaires were obtained. The respondents were given a list of statements that measured their extent of agreement towards the variables. The items were measured on a 5-point Likert scale with 1 representing low score (Strongly disagree) and 5 representing a high score (strongly agree). These statements were selected after three rounds of pilot testing with the factor loadings above 0.70. For the reliability of the research tool Cronbach alpha test was performed, and obtained the alpha value of 0.78, this shows the tool is reliable.

VI. Analysis and interpretation

Consumer behavior is studied from two dimensions i.e., the behavior of consumer as an individual and the behavior of consumer in the social setup. Amongst the social setup culture has got considerable influence. To know the

influence of culture on consumer behavior, cosmetics factor analysis was performed for the elements of culture, sub-culture and cross culture

Table 1: KMO and Bartlett's Test

KMO and Bartlett's Test		Culture	Sub Culture	Cross Culture
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.586	.669	.592
Bartlett's Test of Sphericity	Approx. Chi-Square	101.041	209.597	79.907
	Df	3	3	3
	Sig.	.000	.000	.000

The above table shows the KMO and Bartlett's Test in which the suitability of data can be checked. The KMO measure for sampling adequacy should not be less than 0.5. If it is less than 0.5, it indicates that results from factor analysis are not useful. In the above table for all variables culture, sub culture and cross culture KMO measure for sampling adequacy are above 0.5.

Table 2: Communalities

S. No	Consumer Behavior Elements	Initial	Extraction
Culture			
1	One's own personal culture guides the selection of Cosmetics.	1.000	.496
2	The language and the symbols used on the package Influences the selection of cosmetics.	1.000	.645
3	The ritual which we perform has an effect on the use of Cosmetics.	1.000	.442
4	Our subculture influences the selection of cosmetics.	1.000	.630
5	The different states of our country have emerged as sub Culture which influences my selection of cosmetics.	1.000	.658
6	The religion to which we belong has a subculture which Influences my cosmetics selection.	1.000	.587
Cross Culture			
7	As global teenage category cosmetics tastes converge, the influences of other country teenagers are more on our country teenagers.	1.000	.602
8	I Would like to buy cosmetics of most favored world brand.	1.000	.498
9	We like such global brand which study the needs of their customers and fulfils through quality product.	1.000	.427

The proportion of variance in any one of the original variables, which is

being captured by the extracted factor, is known as communality (Nargundkar 2002). From the above table it can be understood that after three factors are extracted from marketing mix variables; the communality is 0.496for Item 1, 0.645for Item2, 0.442for Item 3 and so on for other factors also. Large communalities indicate that a large number of varianceshas been accounted for by the factor solution.

Table 3: Total Variance Explained (Culture)						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% Of Variance	Cumulative %	Total	% Of Variance	Cumulative %
1	1.583	52.768	52.768	1.583	52.768	52.768
Total Variance Explained (Sub Culture)						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% Of Variance	Cumulative %	Total	% Of Variance	Cumulative %
2	1.875	62.492	62.492	1.875	62.492	62.492
Total Variance Explained (Cross Culture)						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% Of Variance	Cumulative %	Total	% Of Variance	Cumulative %
3	1.527	50.904	50.904	1.527	50.904	50.904

Extraction Method: Principal Component Analysis.

The above table explains the total variance explained for consumer behavior elements culture, sub culture and cross culture. From the table it can found that all the three factors have Eigen values more than1 for the influence of reference group. The Eigen values for three factors were 1.027, 1.875, and 1.527 for the factor 1, factor 2, factor 3 of the total variance, what the variables together presents can be understood form the total variance. The index for the present solution accounts 52% of total variance for choosing the influence of culture,52% of total variance for choosing the influence of sub-culture, 51% of total variance for choosing the influenceof cross culture. It is pretty good extraction as it can economize on a number of factors while we have lost48%, 38%, 49% of information content for factors in choosing the variable from culture, sub culture and cross culture respectively. The factor of culture explains 52.768 percentage of variance, the factor of subculture explains 62.492 percentage of variance, the factor of cross culture explains 50.905 percentage of variance.

Table 4: Rotated component matrix

Items loaded	Components
Culture	1
One's own personal culture guides the selection of cosmetics.	.705
The language and the symbols used on the package influences the selection of cosmetics.	.803
The ritual which we perform has an effect on the use of cosmetics.	.665
Sub Culture	2
Our subculture influences the selection of cosmetics.	.793
The different states of our country have emerged as sub culture which influences me selection of cosmetics.	.811
The religion to which we belong has a subculture which influences my cosmetics selection.	.766
Cross Culture	3
As global teenage category cosmetics tastes converge, the influences of other country teenagers are more on our country teenagers.	.776
I Would like to buy cosmetics of most favored world brand.	.706
We like such global brand which study the needs of their customers and fulfils through quality product.	.653

From the above table the loading of the factors can be observed. The loading on factors can be positive or negative. The inverse relationship of variable with the rest of the factors is explained by negative loading. The Higher the loading the more important is the factor. According to the suggestions of statistician, anything above 0.44 could be considered salient; the increased loading becomes more vital in determining factor. All the higher loadings in the table are positive. The summary of the factor analysis can be seen in the below table.

Table 5: Consolidated factor analysis for consume behavior

Factor	Factor interpretation (% of variance explained)	Loading	Variables included in the factors
Culture	This factor explains 53% of variance	.705	One's own personal culture guides the selection of cosmetics.
		.803	The language and the symbols used on the package influences the selection of cosmetics.
		.665	The ritual which we perform has an effect on the use of cosmetics.
State and		.793	Our subculture influences the selection of

religion as cosmetics Sub-Culture	This factor explains 62% of variance		cosmetics.
		.811	The different states of our country have emerged as sub culture which influences my selection of cosmetics.
		.766	The religion to which we belong has a subculture which influences my cosmetics selection.
Global brands as cross culture	This factor explains 50% of variance	.776	As global teenage category cosmetics tastes convergethe influences of other country teenagers are more on our country teenagers.
		.706	I Would like to buy cosmetics of most favored world brand.
		.653	We like such global brand which study the needs oftheir customers and fulfills through quality product.

The above table is the summarized table of the factor analysis, which explains the number of factors loaded, the percentage of variance, and the factor loading to the variables.

VII. Findings

- The factor „Culture“ is explained by three items: “One’s own personal culture guides the selection of cosmetics,” “the language and the symbols used on the package influences the selection of cosmetics,” and “the ritual which we perform has an effect on the use of cosmetics “with a cumulative variance of 53%. It means that according to consumers „one’s own personal culture guides the selection of cosmetics the language and the symbols used on the package influences the selection of cosmetics the ritual which they perform has an effect on the use of cosmetics“.
- “Our subculture influences the selection of cosmetics,” “the different states of our country have emerged as sub culture which influences my selection of cosmetics,” “the religion to which we belong has a subculture which influences my cosmetics selection, “are the key items obtained through factor analysis of state and religion as cosmetics sub - culture. The three items explain a cumulative variance of 62% of the total variance of state and religion as cosmetics sub - culture. It means that the consumers are of the opinion that their „subculture influences the selection of cosmetics“ and „the different states of their country have emerged as sub culture which influences their selection of cosmetics“, and the „religion to

which they belong is also another type of a subculture which influences their cosmetics selection“.

- This research has identified three items reasoning global brands as cross culture. The first item is “as global teenage category cosmetics tastes converge the influences of other country teenagers are more on our country teenagers”, the second item is “I would like to buy cosmetics of most favored world brand”, the third item is “we like such global brand which study the needs of their customers and fulfills through quality product”. Global brands as cross culture is explained by these three items together explaining with a cumulative variance of 51%. It can be understood that as „global teenage category cosmetics tastes converge the influences of other country teenagers are more on our country teenagers“, „they would like to buy cosmetics of most favored world brand“, „they like such global brand which studies the needs of their customers and fulfills through quality product“.

VIII. Conclusion

According to consumers while selecting cosmetics, culture influences their selection. Cosmetics are selected in the framework of personal culture and rituals performed. Along with that the language and symbol on the package influences their selection. Consumers are of the opinion that their subculture influences the cosmetics selection and they have derived subculture from the culture of the state and religion to which they belong.

Consumers are also getting influenced from cross-culture of different countries. Today’s globalization has converged the global teenage category tastes and preferences, as a reason global teenagers influence is on our country’s teenagers. As a result of that consumers would like to buy cosmetics of most favored brand because they know that global brands fulfill the needs of their customers through quality products. For the inclusive growth of the country “economy understanding sectorial growth is important. This research brings the possibility of good growth of cosmetics sector with the study of culture.

This research is carried out to study the general perspective of cosmetics consumers understanding of culture. The study would have been more interesting if it was conducted on some specific cosmetics brands. The same study would have been made still more interesting by comparing herbal and chemical cosmetics emphasize on culture.

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