



UNDERSTANDING B TO B INDUSTRY CONSUMPTION DEMAND: A CASE STUDY OF STEEL USAGE IN CERTAIN INDUSTRIES

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ABSTRACT

Over the past few years, B (Business) to B (Business) has become the standard form of transactions involving a manufacturer & manufacturer, manufacturer & wholesaler, or wholesaler & retailer. The study aims at understanding the buying behavior in B to B setting for capturing the market demand of consumption of steel by pharmaceutical industries, medical equipment, and hospitals as well as evaluation of the scenario of demand post-COVID-19. The study is done for two months based on a questionnaire administered in different regions of India among the manufacturers of pharmaceutical equipment, medical equipment, and hospital furniture, and the data published in various articles, journals, and brochures. It consummated to understand their buying behavior about the demand and consumption of steel. The methodology for the analysis mostly dealt with percentages and average methods. The study revealed the buying behavior, the actual consumption of steel, the effect of COVID-19 on consumption, and the scenario of demand post-COVID-19. The study helps in understanding the buying behavior in the B to B setting. Hence, contribute to capturing the market demand in the present and future.

KEYWORDS: B TO B Industry, buying behavior, market demand, steel consumption, pharmaceutical equipment, medical equipment

JEL CLASSIFICATION: M30, M31

CITE THIS ARTICLE: Purang, Sonia., P.S., Raychaudhuri. (2020, September). Understanding B to B Industry Consumption Demand: A Case Study of Steel usage in certain industries. *In Perspectives on Business Management & Economics (Vol. II, pp. 24-36)*. Retrieved from <http://www.pbme.in/papers/39.pdf>



ARTICLE HISTORY: Received: July 17, 2020; Accepted: August 30, 2020;
Published: September 30, 2020

1. INTRODUCTION

Over the past few years, B (business) to B (Business) is the most common form of transactions between professions involving a manufacturer(supplier)& manufacturer, manufacturer & wholesaler, or wholesaler & retailer. (Chen James, 2020)

B to B is a form of marketing that focuses on the value of enhancing productivity and eliminating waste. The type of marketing is far less interested in trends and is more systematic while making decisions for purchase and always follows a careful formal process. The single decision-maker in B to B marketing is rarely involved, and are generally a team of people who stipulates to know how exactly your offerings are worth their money. The people who insist on B to B marketing are more interested in the facts that, how they will earn a good return on investment from your business. Hence, the ultimate target of B to B marketing is the individual's need, challenges, and interest that purchase the benefit of their organization rather than, themselves thus making the organization their customers. (Lee Anthony, 2020)

Different authors have defined the organizational buying behavior in their terms, but/ each definition must comprise three features: the study of human behavior, the research of the organization's behavior, and the organization's effectiveness could be, enhanced by knowledge on human behavior. (UKEssays, 2018).

According to Pete.D. Bennett, organizational buying behavior is the decision-making process by which a buying group establishes the needs for goods and services and identifies, evaluates, and chooses among alternative brands and suppliers.

According to W.M. Pride and O.C.ferrel, "organizational buying behavior refers to the purchase behavior of producers, government units, institutions, and resellers. (BlogSpot Analysis Project, 2014).

Likewise, different authors have defined consumer buying behavior in their terms. Some of which are clarified below:

According to Engel, Blackwell& Mansard, "consumer behavior is the actions and decision processes of people who purchase goods and services for personal consumption" (Cottman Tamera, 2008)



According to Louden and Bitta, “consumer behavior is the decision processes and physical activity, which individuals engage in when evaluating, acquiring, using, or disposing of goods and services. (Chand Smriti,2014).

Thus, a reader must understand the main differences between organizational buying behavior and consumer buying behavior, mentioned below:

Organizational buying is an acquiring of goods and services (raw material) to produce another good with an intention to earn the profit. Here, the buyer is not the final consumer. Whereas, consumer behavior is the purchase of goods and services done by the final consumer for their consumption. (in. Brainly, 2019).

LITERATURE REVIEW

FACTORS INFLUENCING B TO B PURCHASE DECISIONS: The factors that create an impact in influencing the purchase decision in B to B marketing are- The external factors, the internal factors, and the conditional factors

Economic Conditions: Variations in the money market and the rate of interests creates an impact on the buying decisions and strategies of B to B marketing. However, both interest rates and business buying have an opposite relation, which means that a rise in purchase rates will lead to a decline in interest rates and vice versa.

Social Environment: The businesses have to continuously adapt themselves according to the evolving changes to meet the demand of the customers. Business objectives, Manpower skills, and Technologies factors are the internal factors that influence the B to B buying decisions.

Business Objective: The prime element that determines the purchase decision of any business is its goals and objectives. For instance, if the business wants to target/ attract the customers with cheaper goods, they will purchase from suppliers with low cost; however, if the company wants to target the market with Good quality, the outcome then/ purchase from a satisfactory supplier is made.

Technological Factors: The compatibility of new products with technology is the foremost consideration when the decision-maker buys the input material product. Hence, in some cases, technology becomes the factor that influences the buying decision.

Present financial condition is the conditional factor that influences the buying behavior in B to B setting.

Present Financial Conditions: In the case of low running cash or budget, the B to B organization can take one of the two alternatives that are they may buy a product from the



supplier that provides long term credit OR they may buy the cheaper products that come in their budget. (Salezshark, 2020).

BUYING CENTRE IN ORGANIZATIONAL BUYING

The buying center in an organization consists of various members-

Initiators: The person who starts the buying process by recognizing the need for the product and use the product or service.

Users: The person as dominant as initiators who plays a vital role in the buying process an ultimately uses the product & assess the worth of the product after purchase.

Deciders: The person who chooses the product after determining the requirement and specifications of a product.

Buyers: The person who plays a vital role in selecting the suppliers/ vendors and negotiating the purchase terms and sometimes even assist the shape of the product specifications.

Gatekeepers: The person who manages the flow of information between the buying centers, they are general secretaries or tech people. They are also sometimes referred to as "Filter of Information" (Com? This Know, August 2018)

FACTORS AFFECTING ORGANIZATIONAL BUYING BEHAVIOR

Generally, two types of decisions taken in an organization are autonomous or joint decisions. Joint decisions/ lay hold of by experts representing different departments of a firm. On the other hand, an Autonomous decision is to lay hold by an individual. The factors that influence the organizational buying behavior are listed below-

Economic factors: The factors by which the firm has an indirect influence. They include Government policies, current economic conditions, and competitive advantage, and technological advancements.

Organizational factors: It further consists of three internal factors- organization size, orientation, and degree of centralization. For instance, in a small organization or small family-owned firm, the decisions will be centralized. Whereas, in the case of larger firms, the decision is to lay hold of by the team of experts representing the different departments of a firm leading to a joint decision.

Political and legal factors: Some policies affect the firm positively while/ some may affect the firm negatively. The political factors include the government policies & concessions announced timely. (.com wisdom jobs, 2009)



OBJECTIVES OF THE STUDY

1. To understand the structure of the steel industry, types of steel manufacture, and its user industries.
2. To understand the market demand and consumption/ buying pattern of steel by small business organizations in Pharmaceutical equipment, medical equipment, and hospital equipment industries.
3. To study how COVID 19 has affected consumption.
4. To evaluate the scenario of demand post COVID-19
5. To understand the operations, the business relationship between big steel manufacturers and small steel equipment manufacturers, and hence the business buying behavior of small business buyers.

SCOPE OF THE STUDY

1. The study covers a survey with a structured questionnaire from manufacturers of Pharmaceutical equipment, Medical equipment, and hospital equipment around different regions of India.
2. The study will help to understand B to B setting. Hence, contribute to capturing market demand in the present and future.
3. The study will help the reader to understand the structure of the steel industry.
4. The study will also help to enhance the readers' knowledge about the different categories of steel available and types of steel employed by pharmaceutical industries, Medical equipment, and hospital equipment.

Different categories of steel

The reader must understand the three types of steel available, and their main differences the hot-rolled, the cold-rolled, and the galvanized steel. The primary differences between the different steels are the way they manufactured at the mill, and not in regards to the product specification or grade. The situation where précised shapes and tolerance are not required the Hot-rolled steel/Is preferred. Whereas, in a condition where précised shape/ tolerance play a vital role, cold-rolled steel, is preferred. On the other hand, galvanized steel is an ideal option for the conditions of high humidity and external environments. (Supermarkets Metal, 2014)



Pharmaceutical Industries

The pharmaceutical equipment/ employed of four types of stainless steel 304,304L, 316, and 316L. Pharma equipment must/ made up of material that should not react with the excipients or with the active material. Out of the four grades, SS- 316 & 316L used in the construction of Pharma equipment that has direct contact with Pharma products, including water system tanks and, pipelines whereas in non-contact parts such as valves SS304 is used. The reason for using ss-316,316L over ss-304 is more resistance towards strong acids and bases. The examples of finished pharmaceutical equipment are Capsule filling machinery, Tablet compression machinery, Tablet coating pans, etc. (Choudhary Ankur, 2015)

Medical Equipment

The medical equipment has to cope up with two challenges the design and the fabrication process. The stainless steel employed in medical equipment is SS 304. The reason behind this is that no other grade of steel comes in so many forms, finishes with such a diverse application. Examples- Oxygen concentrator/ Ventilators/ Hematology Analyzer. Moreover, it is a logical choice for medical devices specification because of its unique matter characteristics. There are multiple reasons for using SS 304 in medical equipment; the prime reasons are its high corrosion resistance, its strength, its reliability, its good formability, its manufacturing precision, and its hygiene. (AZoM, 2012)

Hospital Equipment

As medical industries require special inspections to pass the standards, stainless steel is well-suited to metal for the medical industry because no other metal stands out the test and provides such great results. The second reason be a high requirement for sanitization and cleanliness

Widely used austenitic stainless steel/ also known as 18/8 stainless steel, a type of stainless steel 304 is used in hospital equipment because of its good forming and welding properties as well as a powerful strength and corrosion resistance. Also, it can devise a variety of shapes. Some examples of equipment used in hospitals are Hospital beds, Examination couch, Medical racks, and cabinets, etc. (Abouleish Reba, 2012)

RESEARCH METHODOLOGY

Research Design: It is informative and explanatory. Both qualitative and quantitative approaches have been/ adopted.

Questionnaire Design: The questionnaire consists of different sections of questions related to variables under study and variables mapped to objectives to obtain what we are trying to



find out from the respondents. The questions are weighted in percentages marked by manufacturers for each question as per their perceived consumption.

Sources of Data: The researcher collected the data by getting a questionnaire filled up by various manufacturers among different regions of India, which helped in doing quantitative analysis. The telephonic interview assists/ to have a profound qualitative insight into manufacturers. The researcher has also referred to various articles, journals, and brochures on websites.

Sample Design: For analysis, a sample of at least 150 manufacturers was chosen from different regions of India. The manufacturers were approached based on their availability manufacturers, were appealed to respond. We cannot force them to respond. Manufacturers from the different - regions were selected so that geographical distribution gives a representative of the population of manufacturers under study.

ANALYSIS AND DISCUSSION

A plot of around 70 manufacturers was done, which helped clarify the variables under the main study. The descriptive method of result analysis was adopted. Google Forms is used to generate bar charts, while Microsoft Excel is used to derive pie charts for analysis and interpretations. The averages were calculated based on the percent response.

DIFFERENT GRADES OF STEEL

Figure 1: Pharmaceutical Equipment

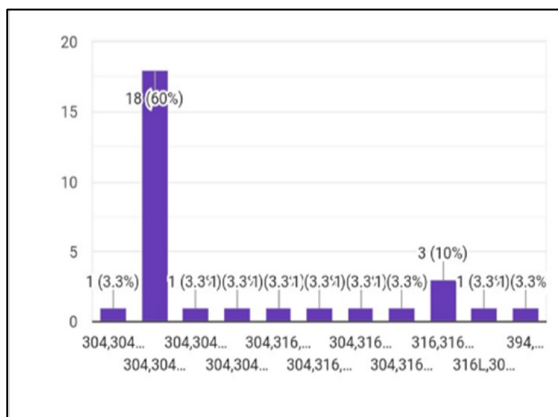


Figure 2: Hospital Equipment

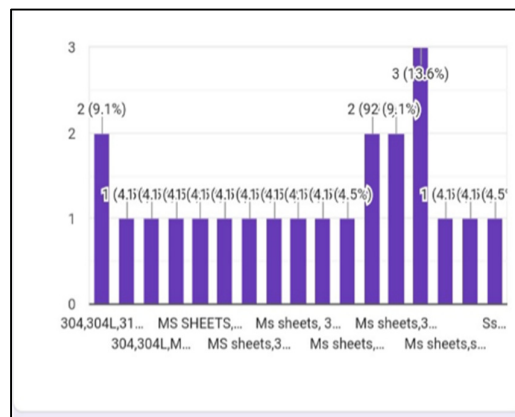
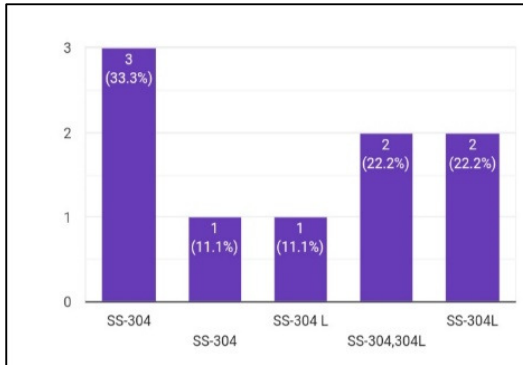




Figure 3: Medical Equipment



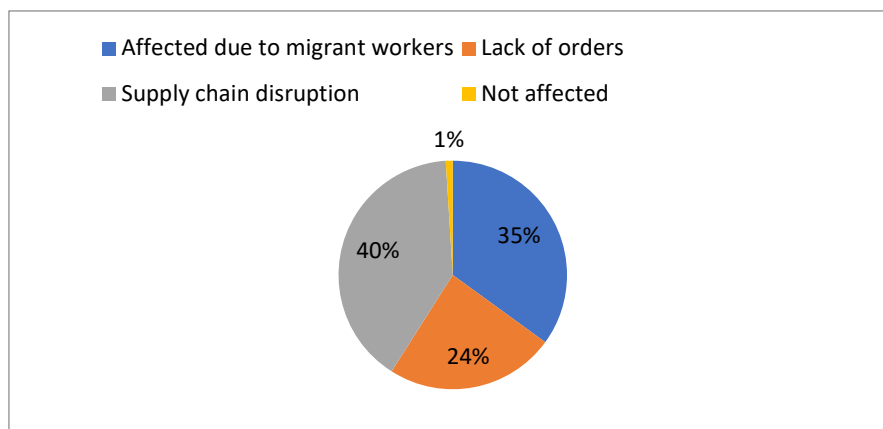
Source: Researcher's Survey

DATA INTERPRETATION

- The X-Axis represents the different grades of steel utilized.
- Y-Axis represents the maximum number of the same responses.
- Figure 1 represents the grade of the steel used in pharmaceutical equipment.
- Figure 2 represents the grade of steel used in hospital equipment.
- Figure 3 represents the grade of steel used in medical equipment.
- Stainless steel – 316,316L, 304 &304L, are used in pharmaceutical equipment (Figure 1), in hospital equipment (Figure 2) - as mentioned in the secondary data, SS-304,304L are used in manufacturing, but during the survey, it was analyzed that MS Sheets of varying thickness is also used along with SS-304 & 304L. Whereas, in the case of medical equipment-SS-304 is preferred

COVID-19 AFFECTED PRODUCTION

Figure 4: COVID-19 affected production: Pharmaceutical Equipment

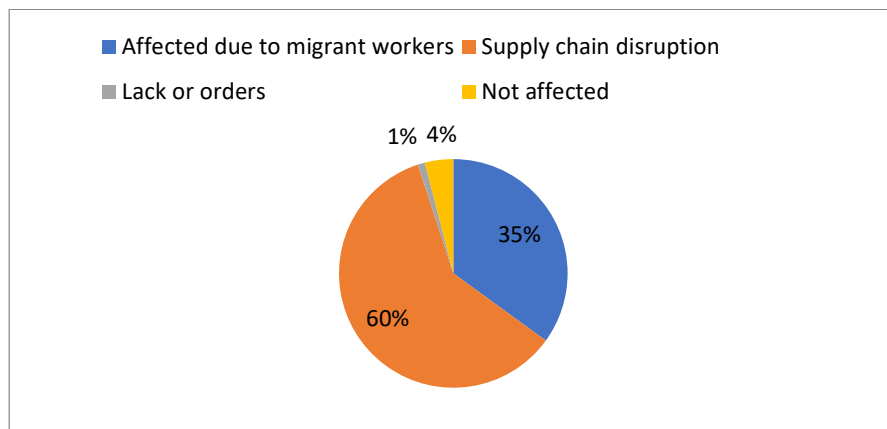


Source: Researcher's Survey



- In Figure 4 (Pharmaceutical Equipment), 1 percent of manufacturers said that COVID-19 has not affected their production. Preferably, it has increased the usage of steel due to an increase in the consumption of syringes and other equipment. Whereas, 99 percent of manufacturers reported that COVID-19 have affected their production as:
- 40 percent of manufacturers said that supply chain disruption during Covid-19 is the reason for the effect in their manufacturing.
- 35 percent of manufacturers faced problems due to migrant workers. As the lockdown was imposed by the Government, many workers migrated to their native places, which have to lead to a shortage of workers in manufacturing plants and have increased the time of production.
- 24 percent of manufacturers were facing the lack of orders due to the lockdown imposed in regards to COVID-19

Figure 5: COVID-19 affected production: Hospital Equipment

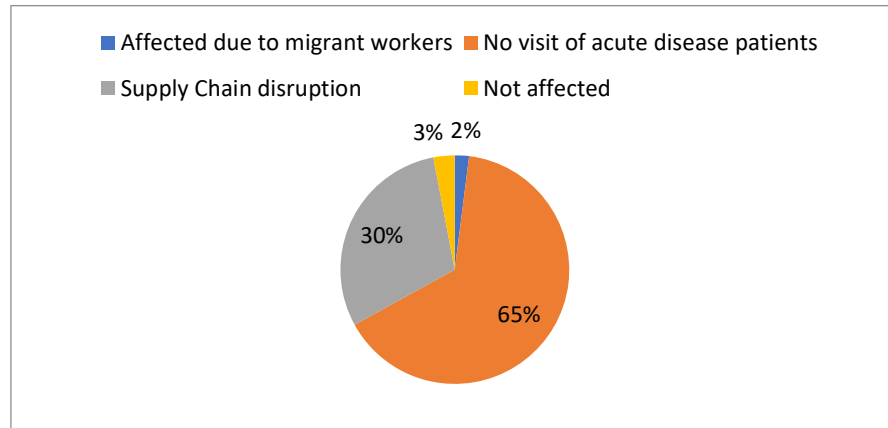


Source: Researcher's Survey

- In Figure 5 (Hospital Equipment) 4 percent of manufacturers said that COVID-19 have increased the demand of hospital equipment such as hospital beds, hospital tables, medical trolley whereas, 96 percent manufacturers said that COVID-19 has affected the demand as the production for the equipment, was based on the tender issued by the Government. The problems faced by the manufacturers are:
- 60 percent of manufacturers reported that supply chain disruption is the reason for the production to be affected.
- Whereas 35 percent faced problems due to the migration of workers. Whereas 1 percent of manufacturers faced a lack of orders.



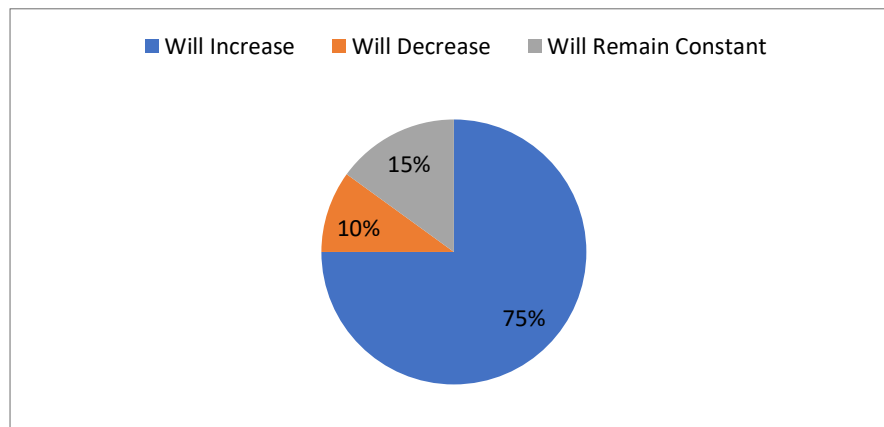
Figure 6: COVID-19 affected production: Medical Equipment



Source: Researcher's Survey

- In Figure 6 (Medical Equipment), 3 percent of manufacturers said that COVID-19 has enlarged the production as the demand for medical equipment such as oxygen cylinders, ventilators, oximeter has increased on a large scale. Whereas, 97 percent of manufacturers said that COVID-19 had affected the production as they are local manufacturers and have faced problems such as:
- 30 percent of manufacturers have faced problems due to supply chain disruption due to COVID-19. As the flow of raw material was delayed, the production time has also extended, which further affected the production.
- As mentioned in the published report by the Health Ministry of India, COVID-19 has increased the awareness of health among people, due to which the acute illness cases in this year have fallen. The same was reported by 65 percent of manufacturers that no visit by acute illness patients- has decreased their production.
- 2 percent of manufacturers faced problems due to the migration of workers.

Figure 7: Demand Scenario post-COVID-19



Source: Researcher's Survey



- The world believes as instantly, the vaccine for COVID-19 will be discovered, and the things come to be usual. The growth and production of each sector in the world will enlarge. The same was analyzed in the survey; the manufacturers of all equipment have a belief that as soon as things come back to normal, the scenario of demand will be as follow:
- 75 percent of manufacturers reported that scenario of demand post-COVID-19 will increase as the migrated workers will return from their native places which were one of the reasons for affecting the production, recovery of the supply chain would be the next reason for the increase in demand and the manufacturers affected due to lack of orders will begin to get the new orders.
- 15 percent of manufacturers reported that the scenario of demand will remain constant post-COVID-19. This 15 percent of manufacturers belong to a section that manufactures masks, PPE kits, and other equipment used in the COVID-19 outbreak.
- The remaining 10 percent of manufacturers said that post-COVID-19 the demand would decrease as COVID-19 has created a financial burden over the firms. Till the time firms cope up with the financial crisis, the scenario of demand will decrease.

CONCLUSION

Thus, we summarize and conclude, corresponding to each of the objectives:

1. The study has explained the different grades of steel utilized by pharmaceutical equipment, hospital equipment, and medical equipment. In contrast to secondary data, the survey has helped us to gain extra insights and additional information about the different categories of steel utilized. As in the case of hospital equipment, it was observed that MS sheets, along with SS-304,304L, are used in manufacturing. The study thus provides the reader with sound knowledge about the structure of the steel industry.
2. COVID-19 has not only impacted the Healthcare system of the world but has affected other sectors as well. Based upon the result of the survey, the majority of the manufacturers agreed to the fact that COVID-19 has affected the consumption of steel, accompanying many other problems such as no new orders or inquiries, difficulties due to migrant workers, and an increase in production time.
3. The world believes as instantly, the vaccine for COVID-19 will be discovered, and the things come to be normal. The growth and production of each sector in the world will enlarge. During the survey, 10 percent of manufacturers reported problems faced due to COVID-19, 15 percent reported the scenario to be constant whereas, 75 percent of manufacturers reported that the scenario of the demand will increase post-COVID-19. Thus, the survey analyzed a belief among manufacturers that as soon as things come back to normal, the scenarios of demand will resurge to precursory.
4. It can be concluded that consumer buying behavior plays a vital role in B to B settings. The study has explained the role of business buying behavior and the factors influencing it. Thus, the study provides a sound knowledge which helps to get a deeper insight into the consumers' mind.



LIMITATIONS

1. Not all respondents have responded. So, the study cannot give 100 percent accurate results.
2. Some of the manufacturers were reluctant to have communication. So the response could be a bit biased.
3. The sample size could have been larger.

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