

## ORGANIZATIONAL CULTURE OPPORTUNITIES TO ENHANCE MERGER AND ACQUISITION OUTCOMES IN INDIAN FIRMS

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### ABSTRACT

*The study's purpose is to review the merger and acquisition practices of Indian firms pertaining to organizational culture, with the aim of identifying potential opportunities to enhance outcomes. This would be performed by first consulting existing literature and cases to understand current practices, and then investigating and evaluating the potential benefits of studying culture through primary research. The culture of the merging firms shall be identified and studied by means of a standard inventory, which would also help understand potential conflicts and issues. Thus, by comparing anticipated concerns against observed concerns and issues faced during integration, we may infer the utility and potential of these methods. It may thus help identify opportunities for improvement in context of the current practices and challenges in the industry.*

**Keywords:** Organizational Culture, Change Management, Mergers & Acquisitions

### Introduction

Mergers and Acquisitions (M&A) have long been an important tool for businesses to expand and fulfill their strategic needs [1]. The enormous potential benefits and challenges inherent in such deals has attracted considerable academic attention and scrutiny over the years. While the various motives behind mergers have been analyzed and categorized, it has proven difficult to harness these theoretical benefits in practice [2]. Various studies indicate that between 70% and 90% of mergers fail to achieve their stated objectives, highlighting the high risk levels associated with M&A [3], [4]. The high failure rate has attracted criticism and has led to many questions about the utility of such deals, evidencing the destruction of shareholder value [5]. Despite the concerns, cumulative global merger and acquisition deal values exceeded 3 trillion USD for the sixth consecutive year in 2019 [6]. With businesses having few viable alternatives to M&A, there is great potential in understanding and mitigating the challenges to facilitate better results.

Research into the performance of mergers have been approached from a broad range of perspectives, focusing on a variety of factors [7]. Studies have linked stronger investor protection laws to higher bid premiums, and observed the influence of prior experience on subsequent merger outcomes [8], [9]. However, despite numerous efforts, these investigations into potential predictors of merger performance

have largely been inconclusive [10]. The nature of M&A brings with it inherent complexities and makes it difficult to study due to the great diversity in deal types as well as the uniqueness of individual deals.

Academics have found that effective integration of the firms has a key role to play in the success of a merger [11]. The ability to effectively manage the integration process, especially the sociocultural aspects, is a key factor in determining the extent to which the envisioned synergies are realized [12]. However, it is observed that human resource and cultural factors are often overlooked in favor of scrutinizing the legal and financial aspects [13]. While most executives realize the importance of culture in a merger, there is often limited involvement of HR leaders at the crucial junctures of the process [14], [15]. Hence, better understanding and management of organizational culture concerns during pre and post-merger stages is a significant opportunity for firms to obtain better results [16].

In order to understand the challenges faced by Indian firms, we must first establish the context. Mergers and acquisitions as well as other restructuring activities were relatively rare in India before the introduction of the New Industrial Policy – 1991, which brought major reform to the business environment [17]. These measures replaced the previous system, which depended on heavy regulation and necessitated organizations to obtain a large number of

licenses, permits and quotas to operate [18]. The old system was thus informally termed as the License Raj, comparing the influence of these regulations on corporate affairs to the British Raj. The heavy handed regulation in the past lead to the evolution of an industrial landscape comprising large companies which were very inefficient and thus required the support of a highly protective trade policy. The government had to implement tailor made protections for each sector of industry for the survival of such firms [19].

The reforms in industrial and trade policies dismantled the barriers to entry that large firms had previously relied on. The simplification of permission and approval processes, the reduction of sectors reserved for public companies, and lastly the easier access to foreign capital and markets brought new competitors who were better positioned than incumbent firms. The result was a massive transformation in India's business environment and lead to heightened levels of competition for India's businesses and industries. Incumbent firms had to adapt by upgrading their technology and transitioning to more efficient scales of operation. This change marked the beginning of mergers and acquisitions in India. M&A came to play a key part in several restructurings and helped firms realign activities and efforts to focus on their main areas of competence [19], [20].

The history of M&A is thus relatively shorter in India compared to the more advanced and developed nations of the world. The first wave of mergers in the US began in 1897, with the nation experiencing its fifth wave by the time India was implementing economic liberalization [21]. Thus the ecosystem surrounding M&A activity in India has had considerably less time to mature. Since the 1990s, the environment for M&A has consistently improved as the legislative, regulatory and legal entities have evolved to match the new paradigm. The promulgation of laws such as the Companies Act, 2013 has helped simplify and standardize the merger process and thus reduced the risk and uncertainty previously associated with it [17]. While initial activity only involved Indian firms, a series of reforms and the relaxation of foreign investment caps have provided new

opportunities for cross border mergers. These changes have opened greater avenues for M&A and the industry has experienced rapid growth. The overall deal count in India for 2019 stood at 443, collectively valued at over 61 billion USD [22]. With the rising value and sophistication of deals, the accompanying managerial practices surrounding mergers and acquisitions have also had to evolve and have come to play an increasingly important role in the nation's economy.

This study is directed towards identifying opportunities to enhance the management of cultural concerns in mergers and acquisitions in India. India faces many different challenges due to the relatively late initiation of merger and acquisition activity in the country. Indian corporates are still largely promoter controlled and managed and thus there are other concerns besides purely rational and professional decision making [23], [24]. There has however been a change in the strategy employed by these promoters, with more of them willing to divest their longstanding interests in their firms. There has also been more M&A activity in the public sector. While there was a decline in internal mergers and restructurings, private equity deals have been growing in number and value. A lot of the activity was concentrated within the manufacturing sector [22]. Given the enormous size of the industry, a lot rests on their successful execution and implementation. Since effective integration is often predicated upon organizational culture, it is essential to gauge the practices used to mitigate its effects as well as the level of awareness surrounding it. Due to the highly subjective nature of each deal which brings along with it a different set of goals, objectives and challenges, a few specific instances were used. The focus of this study has been restricted to domestic M&A activity.

## Literature Review

### A. Basics of Mergers

A merger may be defined as the combination of two or more companies which can be merged together either by way of amalgamation or absorption [25]. In India they are legally known as amalgamations, and the amalgamated entity is vested with all the rights and liabilities of the constituent firms. Mergers are usually facilitated by offering the shareholder of one firm an

interest in the acquiring firm in exchange for the surrender of their existing shares [26].

The four broad types of mergers are as follows:

1. Horizontal Merger: This involves a merger of two or more firms that are competing in the same industry as well as level. It is essentially a merger with a direct competitor and thus expands the firm's presence within the same industry. This type of merger is often used to achieve greater economies of scale and results in a reduction in the number of direct competitors in the industry [25].

2. Vertical Merger: This type of merger is said to happen when the combining firms are part of the same industry but at different stages within the value chain. This may be further classified based on relative position of the acquiring and acquired firms within the value chain. If a company acquired one of its suppliers, it is said to have undergone backward integration, whereas if the acquired firm happens to be a customer, the deal is called a forward integration. Vertical mergers provide a way for greater integration within the industry and help firms expand within it [25].

3. Co-generic Mergers: This type of merger involves two firms that are either in the same or related industries, while at the same time not offering the same products. The products may however be related and may utilize similar distribution channels and offer other synergies after a merger. The potential advantages of these mergers is high due to the opportunities to diversify whilst with a common set of strategic resources [25].

4. Conglomerate Mergers: This is a merger involving firms engaged in a group of unrelated activities. In other words, the firms are involved in businesses which are not related to each other vertically or horizontally. A pure conglomerate merger doesn't have any commonalities between the firms. It often involves various different businesses under a single flagship firm. The benefits of this type of merger include better access to and utilization of financial resources as well as the merging of corporate level functions [25].

Each type of merger has its own set of advantages and challenges [27], with the integration requirements varying based on the

level of overlap or degree of relatedness between the organizations, among other factors [28]. Due to the high cost and risks associated with the post-merger integration (PMI) process, integration decisions are weighed against potential benefits [29], [30]. Thus, integration levels vary from high in case of horizontal mergers, where more synergies are available, to minimal in the case of conglomerate mergers. Effective cultural integration is an essential part of the integration process, and the process of cultural assimilation itself being known as acculturation [31], [32], [33].

The four broad modes of acculturation are assimilation, integration, separation and deculturation. [34], [35]. During assimilation, members of one firm willingly adopt the culture of the other, leading to structural, cultural and behavioral realignment were the former culture ceases to exist. In integration, there is structural realignment in the absorbed firm with minimal changes in culture and behavior. In separation, all forms of realignment are minimal with both constituent groups retaining their own characteristics, while deculturation results in the loss of alignment with the characteristics of both previous entities. Determining the appropriate method of acculturation is an important strategic decision. Absorption is suitable used when the cultural difference between the two firms is low, while firms with major cultural differences may either form a new culture by combining the best practices and attributes of both firms or pursue the separation method [36].

During integration it is essential to consider the cultural aspects of any decision involving structural or process changes. Structural changes adopted without managing cultural considerations causes culture conflict and friction, which leads to increased attrition, loss of productivity and low levels of trust and cooperation. Thus, structural changes must be planned alongside a well designed cultural change plan. [37]. We observe that the practices in Indian firms vary widely, ranging from no consideration given to culture right up to experienced firms formulating detailed plans and hiring consultants to manage cultural & HR integration. [38], [39], [40], [41]. Thus a simple

and effective means of gauging and managing culture could potentially benefit future deals.

### *B. Organizational Culture*

It is important to understand and define organizational culture in order to proceed further. It has been described as a set of attributes which define and distinguish firms [42]. It comprises both immediate or dynamic behaviors and phenomena as well as a coercive underlying structure which influences individuals in various ways. Culture provides a certain degree of consistency to how individuals perceive, interpret and respond to situations and establishes the norms and expectations within a group. It plays a prominent part in molding the behavior and values of people. Culture is thus deeply entwined with leadership and the management of people and organizations. The leaders exercise a considerable amount of influence in shaping and managing the culture. Leadership requires the management of the dynamic processes of creating and maintaining culture. [43] Organizational Culture may thus be defined as an enduring set of values, beliefs, and assumptions that characterize organizations and their members. It is an enduring, slow changing core attribute of organizations [44].

Organizational culture manifests itself at various levels. The surface level manifestations are called artifacts which are visible and easy to observe and include characteristics such as language and style. At a deeper level there are espoused values while the deepest level comprises the basic assumptions within the culture [45]. While individuals may perceive two cultures to be different, it is hard to decipher them without an appropriate structure.

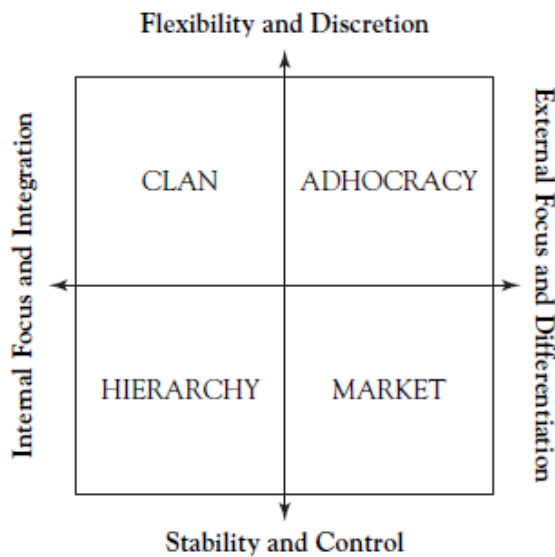
In order to study culture and to distinguish the cultures of various organizations, there is the need to adopt an appropriate method of classification. A typology is a means of classification based on types and categories. Typological analyses are a way of developing a set of related but distinct groups or categories to classify observations [46]. Typological models are widespread in research and have been successfully used in a variety of similar studies [47].

Various models and inventories have been devised in order to measure organizational

culture [48]. One of the popular methods for doing so is the Organizational Ideology Questionnaire [49]. The initial typology was published in 1972, when the subject hadn't yet garnered as much interest and its potential was still unrecognized. It resembled the ideal type framework associated with Max Weber. It was later made commercially available and sought to describe the nature of the thoughts and beliefs at the core of the character of a firm. It categorized a firm's culture along the lines of its ideological orientation towards power, role, task and person. These classifications are based on the extent of centralization and formalization within the firm. A power oriented organization is characterized by a high degree of centralization as well as competition. Such firms strive to maximize the control and influence exercised over subordinates. A role oriented organization prioritizes an orderly and rational approach. There is an emphasis on precisely defining the agreements, responsibilities, scope and procedures alongside the rights and privileges given to employees. They do retain a strong emphasis on hierarchy and status. A task or achievement oriented firm is highly focused on the fulfillment of the set objectives and goals. The firm is structured and evaluated around these goals and any impediments or restrictions to the achievement of these goals are quickly removed. There is little commitment to authority and conventions and a preference for competence and knowledge. Person or support oriented organizations foster a climate of mutual trust and limited power and hierarchy. These organizations prefer achieving consensus and refrain from activities that are incongruent with their goals and values [50]. There are advantages and disadvantages to each of the aforementioned cultures and circumstances may necessitate the transition from one to another.

The Organizational Culture Assessment Instrument (OCAI) based on the competing values framework devised by Cameron and Quinn was chosen for the purpose of this paper. There are several reasons why this instrument was favored over the others. Firstly, the framework's capacity to represent and distinguish an organization's culture has been validated. This makes it ideal for the purposes of comparing two organizations. Besides the above, the inventory possesses the ability to

identify cultural incompatibility as well as methods to mitigate these differences thus perfectly suiting the current use case. Lastly it is versatile since it provides both qualitative as well as quantitative data and is not very lengthy either. The instrument may even be used at the business unit level within an organization if the study is focused at the sub-organizational level.



**Fig. 1. The Competing Values Framework**

The competing values framework is based on two main dimensions giving rise to four different clusters. One of the dimensions differentiates between effectiveness criteria that emphasize individual dynamism and flexibility on one end with stability, order and control on the other. The other dimension represents values such as unity, integration and internal focus on one end, with rivalry, differentiation and external focus on the opposite end. Thus each of the four quadrants depict a different set of effectiveness indicators. In other words, these are the criteria underlying the judgements and decisions made by the firm. Based on these characteristics, the four major culture types were labeled as adhocracy, clan, hierarchy and market. Most organizations possess a dominant type of organizational culture where they exhibit one or more of the given culture types more prominently. Culture types are formed by way of certain values, conventions and priorities being regularized during the course of the firm's operation. While it does impart stability and consistency to the organization, the resistance to transition to another type increases. The

characteristics of each type may be elaborated as follows.

1. **Adhocracy Culture:** This culture type is associated with workplaces and firms which emphasize dynamism, entrepreneurship and creativity. It enables employees who are willing to undertake riskier projects and innovate. The leaders in such organizations foster an environment of innovation and are not averse to the risk associated with it. The firm would often pride itself to be on the leading edge of their field and the culture of innovation and progress binds the employees together. The broader strategy of such a firm is often along the lines of long term growth and capability expansion. Such firms promote and reward individual initiative and effort and empowers employees with the necessary freedom. To summarize, these firms focus on external and competitive position while affording employees significant amounts of flexibility and individuality.

2. **Clan Culture:** This culture type is associated with a friendly and tightly knit community in the workplace. Here leadership often takes the form of mentorship and employees exhibit a considerable amount of loyalty and commitment. Such firms emphasize the development and nurturing of human resources and depend on the cohesion and morale of the workforce to operate optimally. These organizations are often people centric and structured around teamwork and participation. Sensitivity to other employees and customers is also valued. The success of policies and initiatives in such firms is heavily dependent on achieving consensus. To summarize, these firms are focused on internal coherence and flexibility, with a lot of sensitivity towards internal and external stakeholders.

3. **Hierarchy Culture:** This type of culture is present indicative of a formalized, organized and structured workplace. Activities and responsibilities are well defined and adherence to rules and procedures is considered important. Leadership in such firms is centered around efficient organization and coordination of tasks, processes and objectives. Smooth execution and operation is valued in such organizations. The strategic goals of these firms are often based around long term stability and performance as well as smooth, efficient and predictable

operations. Success is measured based on the costs, adherence to schedule and the delivery of desired outcomes. Employees in such firms often value the security of their employment as well as the well-defined tasks and responsibilities entrusted to them. To summarize, these firms prioritize internal maintenance alongside stability and control.

4. Market Culture: An organization with a market culture places the utmost priority on results. The main objective is the achievement of goals and targets. The employees in such organizations are competitive and goal focused. The leaders are often hard divers and may deal with employees in a tough and demanding manner. The competitive spirit within such firms often permeates through the entire organization and holds it together. Achievements and past track record is considered important in such firms along with the reputation one holds. These firms are focused on the achievement of goals and targets as well as engaging in competition against rival firms. Metrics such as market share and penetration are important metrics for such firms, since they quantify the overall performance during a time period. The overall style may be summarized and competitive and driven, with a focus on external competition as well as control. Having identified the organizational culture, a six step action plan may be initiated to initiate the desired cultural transformation.

Based on the pair of cultures and the structure as well as desired objectives of the merger, various plans may be enacted to facilitate transitions within the constituent firms. A change in culture necessitates a transition in style of management, thus requiring measures to help management as well. The Management Skills Assessment Instrument may be used to supplement the findings of the initial study to help identify current realities and direct change more effectively [51].

Having already explored the importance of culture in M&A as well as the wide variation in industry practices, it may be inferred that Indian firms could benefit from better management and study of culture. Thus, TheOCAI inventory was used for the purpose of exploring the utility of

predictive tools to help mitigate and manage culture concerns during mergers.

### Research Methodology

A case based sequential mixed method design [52] was adopted for the purpose of this study. It comprised two main stages:

a) Identification of possible cultural conflicts in a pair of merging firms: The process in this stage resembles the explanatory sequential design approach. TheOCAI inventory was first used to identify the culture profile of each of the merging firms. Next, the culture profiles of a pair of merging firms were compared using the given framework to qualitatively analyze discrepancies so as to identify possible conflicts.

b) Evaluation of preliminary inferences: The inferences derived from the previous stage were discussed with leaders within the firms to ascertain their validity and potential as well as draw other insights.

Two pairs of firms undergoing M&A were picked, ensuring that not only were the initial cultural differences still mostly intact, but also providing the opportunity to evaluate the predictions against the observed phenomena. The first pair of companies "A" & "B" are part of the service sector while the second pair "C" & "D" were part of the energy sector.

Initial Culture identification was done by administering theOCAI inventory through an online form. The sample comprised of 50 employees from each of the four firms while ensuring that they were all members of their respective constituent firms before the merger and that a variety of departments were represented in the group. A convenience sampling method was employed and the cultures were identified based on the responses.

The obtained profiles were compared to draw inferences, which were then discussed with leaders within the firm to ascertain accuracy and utility.

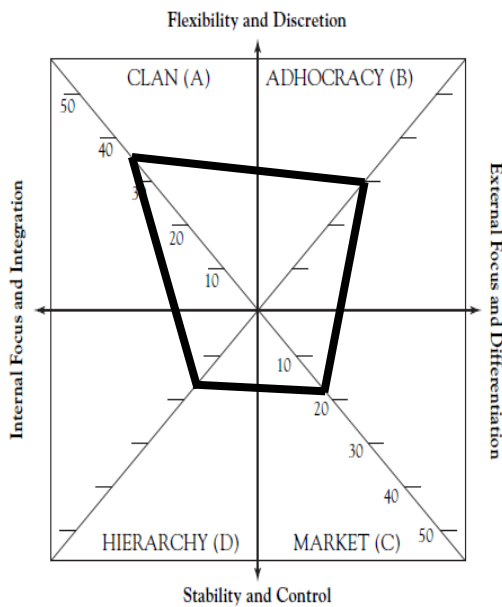
### Results and Analysis

The obtained data was collected and evaluated using Microsoft Excel and the organizational cultures of each of the organizations was identified. The overall response rate was 79%

with 158 responses received, with each individual organization having a response rate above 70%. It must be noted that while the samples used may not be ideal for further quantitative analysis, it is adequate for the purpose of indicating the cultures of the firms in question. A difference of ten or more points along any dimension is considered a major difference

C. First Pair of Firms

The first pair of firms referred to hereby as Firm A and Firm B are both companies in the services sector. The pair of firms underwent a horizontal merger and have been undergoing the integration process since the event. The pair are particularly interesting since one of them is a multinational (Firm A) while the other firm's operates only in India (Firm B). Since they are undergoing a horizontal merger by virtue of being direct competitors, there is a high requirement for integration of all systems and processes within the firm. The plots obtained for the pair are shown in Fig. 2 and 3.



We observe in Fig. 2 that Firm A has an overall culture which exhibits high amounts of clan and adhocratic features. At the same time the similarities to market cultures is low, with hierarchy scoring the lowest of all four. Thus the culture of the firm is observably focused on flexibility and discretion over stability and control.

We observe in Fig. 3 that Firm B received the highest score in the clan category. This indicates that this firm has a people centric focus, which is a quality shared by Firm A as well. While this similarity itself could be a coincidence, it might also be a characteristic which is beneficial in the industry they are part of. The second highest score was in the hierarchy quadrant, indicating that this firm prefers to operate in a more traditional and structured manner.

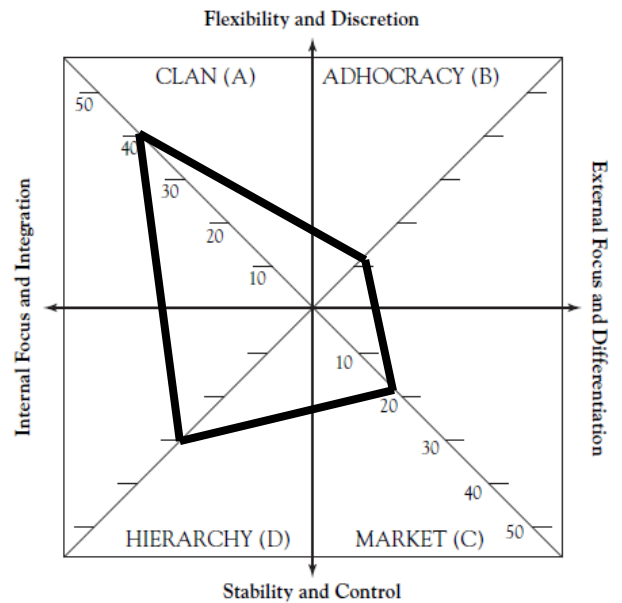


Fig. 3. Culture Diagram: Firm B

The score for market culture is low but similar to that of Firm A, which again may be explained in various ways. Lastly, the score for adhocracy is lowest, indicating that there is limited freedom to experiment and that an instruction oriented and more stable and structured focus is the norm.

D. Analysis of First Pair

The differences within the organizational cultures of the first pair of cultures is remarkable. It must be declared that both firms are of a similar size. While both exhibit a high degree of affinity for clan culture with a moderate to low affinity for market culture, they are very different in terms of their affiliation for hierarchy and adhocracy. While Firm A is highly adhocratic and has few relatively traits in common with a hierarchical culture, the opposite is true in case of Firm B which is

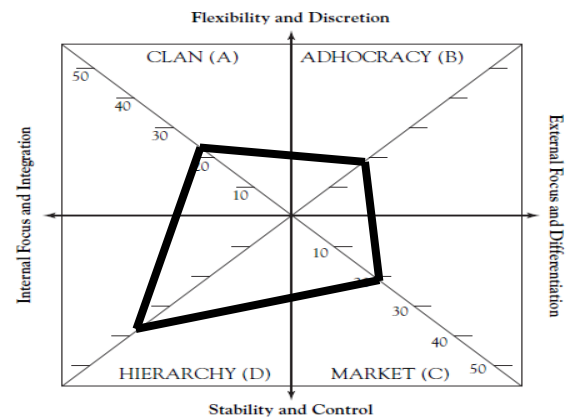
prominently hierarchical. The implications of this crucial difference are manifold.

The imposition of either of the cultures upon the other firm following the merger would be untenable. The predictable, consistent and structured approach to work may be perceived as onerous and unnecessary by Firm A employees, while the freedom afforded by Firm A may be perceived as vague and undisciplined and unstructured by Firm B employees. The underlying systems, infrastructure and processes employed by each organization would similarly be different and would mimic the workstyles employed by each half. Careful consideration must be put into planning and implementing future systems, structures and processes to avoid costly hassles as well as cost and time overruns. Similar concerns would extend to other norms, conventions and etiquette as well. Due to the high degree of integration desired in the final entity, each issue must be painstakingly identified and resolved, with subsequent implementation requiring the buy in and involvement of members on both sides.

Any redundancies or attrition risks disrupting the existing clan culture. The overall picture predicts a long drawn and expensive integration process requiring extensive planning and effective implementation to function, with the surviving portions of both firms operating with relative independence initially with eventual integration. Since absorption might prove difficult given the differences, the mode of integration would involve the realignment of both cultures along the lines of a new culture which combines the desirable elements of both.

#### E. Second Pair of Firms

The second pair of firms, hereby referred to as Firm C & Firm D are part of the energy sector, with Firm C acquiring Firm D. The rationale behind the deal was to pursue vertical expansion, since Firm C is a supplier to Firm D. Their profiles are shown in Fig. 4 and 5.



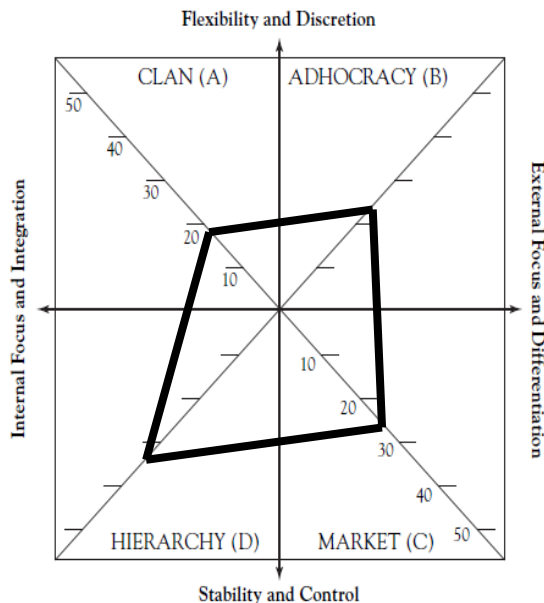
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Firm C is the first among the second pair of firms to be analyzed. We observe in Fig. 4 that among all the cultures, this company's culture bears particularly similarities to a hierarchy culture. As discussed in the past instances, this is indicative of a high degree of formalization and a preference for standardization within the firm. The next most prominent culture for the firm is the market culture, which, though moderate indicates that there is a tendency to engage in competition within the firm. Similarly, the firm is moderately adhocratic, indicating that despite the overall hierarchical structure, there may be some opportunities to explore and innovate. Lastly, the firm doesn't bear many similarities to a clan culture, thus indicating that it isn't people centric in its approach or operations.

Firm D is the acquired firm, operating in the same industry as Firm C but at a different level in the value chain. In Fig. 5 we again observe a high degree of hierarchy culture. This firm has the highest hierarchy score among all of the firms tested. It exhibits a moderate to low degree of market and clan culture traits, with the lowest overall score falling in the adhocracy quadrant.

We can once again immediately infer the high degree of formalization and structured approach to work within the firm. We may perceive this to be a characteristic shared by older Indian firms or as a shared value within the industry that the firm operates in. This firm is less market and adhocracy oriented than Firm C, which might indicate that it doesn't require the same degree of competition and innovation from its employees. Lastly, this firm is more people oriented than the former.





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attribute and interpret these differences to once cause or another. Since they operate at a different part of the value chain, these differences may be due to the inherent dissimilarities between the types of work performed at the two firms. A more accurate picture may have been obtained has there been broader industry wide data to compare with.

Regardless of the above, it may be safely stated that among the two organizations, while there is a general preference for stability and structure, Firm D places greater importance on hierarchy. At the same time, we see that firm C is more open to innovation and competition. Both firms do not have a strong clan culture inclination unlike the previous pair.

Assessing the integration aspects of these firms, additional information may be required to analyze their compatibility, since despite both firms having highly hierarchical cultures, the inherent differences between systems and processes may be considerable. While firm C may offer some amount of freedom to experiment and explore, it is unclear whether this may be a problem, since the work performed may not overlap. Lastly, the low clan culture score indicates that interpersonal or

workspace relations may not pose a big obstacle.

Overall, it may safely be said that while the operational integration of the firms might be a priority in the context of the deal, there would be little reason to immediately culturally integrate these parts of the firm. The differences between different levels of the industry may suit different culture profiles hence there is no immediate benefit on that front. Opportunities exist at the corporate levels of the firms. To conclude, it may be said that organizational culture concerns in this deal are not as apparent or urgent as the previous pair. A separation based acculturation process may be pursued. It is likely that more information regarding the firms and the industry would help bring clarity to this topic, however it may be inferred from the available information that such changes aren't immediately necessary and if integration is to be facilitated it may be done over a longer period of time.

G. Feedback

On obtaining feedback from leaders within the organizations, the initial observation and inferences were generally confirmed while providing greater clarity regarding the causatives. By combining the learnings from this primary research exercise with that obtained from secondary sources, certain suggestions were also brought up. The details of these topics are delved into under the subsequent headings.

Discussion

The interviews confirmed that the broad issues and conflicts predicted for the first pair (Firm A & Firm B) did materialize during the integration process. There were considerable differences between the workstyles of employees as inferred during the analysis. As anticipated, the firm decided to combine elements from the cultures of both constituent companies as part of their acculturation strategy, however the final outcome and success of the deal is yet to be clear. Horizontal mergers require a lot more time to be integrated and the problems are often compounded when the firms involved are larger. The resulting time and effort intensive process is crucial to the successful achievements of deal objectives.

In the case of the second pair of firms (Firm C & Firm D), the interviews revealed that cultural differences were partially attributable to the inherent operational differences at different levels of the industry, as suggested during the analysis. It was indicated that the additional amount of structure and hierarchy may be due to the greater safety concerns at Firm D. Adhocracy within Firm C was also suggested to be linked to the business requirements within certain sections of the company. The reduced amount of clan culture in the firms was also suggested to be linked to the limited need to be human centric in the industry. It proved hard to reliably attribute the cultural differences to either the firm or the industry level due to the lack of wider benchmarks [53].

While these were plausible reasons, further investigation and study is required to confirm them. As suggested, there has been limited progress in the integration process between the two firms. The differences in organizational culture was among the integration related issues that were anticipated, but were not deemed a high priority.

In both the cases, the feedback indicated that the issues identified were not exhaustive and were not precise enough to inform individual decisions. However, it was agreed that the model did possess predictive potential and that better inferences may be derived if the individual sub sections of the inventory were individually analyzed by a team comprising insiders from both firms. It may also be a useful indicator of ease of integration when multiple mergers are being evaluated and compared. Thus it could empower decision makers with greater visibility regarding the potential challenges and thus better prepare for and deploy resources to meet the anticipated challenges. While various confidentiality concerns prevented further and more exhaustive discussions regarding the deals the response was positive.

Though the firms studied in this paper were sufficiently well appraised regarding cultural considerations, it is often observed that smaller firms neglect these concerns. The task of integration is often left to supervisory managers, who are often unprepared and unaware of the challenges involved and are stretched while

managing these issues alongside their usual activities [54]. The applied method is both relatively quick and uncomplicated to deploy and may thus help provide a better structured as well as data driven argument to decision makers who are unconvinced.

While past challenges and failures associated with deals in India has highlighted the important role of human resources professionals in the process, their involvement in the deal is often too late or at a very advanced stage [55]. This study has indicated that preliminary issues and broader challenges may be anticipated long before a deal is underway. This helps leaders plan and execute the integration more smoothly, thus reducing uncertainty and load while the process is underway. Though there is a quantifiable impact of merger durations on the various financial aspects of the deal, [56] human resource concerns are often not identified during the pre-deal audit stage. Faster and better planned deals where employee concerns and fears are addressed while maintaining effective dialogue and communication can help reduce attrition and other post-merger problems [57].

### **Conclusions and Recommendations**

This study explored the important role of managing culture during mergers. The cases employed have illustrated that organizational culture instruments can help managers anticipate the nature and severity of cultural conflicts during post-merger integration. While anticipation of issues may help initiate preparations well in advance of the integration process, the involvement of human resource leaders at the early stages of the deal can enhance the integration efficacy and ensure greater benefits to the firm. Since many of the deals in India involve smaller promoter controlled firms, greater awareness of cultural concerns may be beneficial.

There is scope to derive further insights by utilizing a more detailed version of the inventory and by using a team comprising insiders from the merging firms to interpret the results. That being said, this method may not be ideal for exhaustive analysis.

Secondary research revealed that Indian firms stand to benefit by paying closer attention to organizational culture and involving HR

professionals at an earlier stage of the deal process (the planning stage). Lastly, broader sector and level wise cultural benchmarks could help us interpret cultural profiles across broader types of mergers.

### Limitations

While this study broaches the topic, there is scope for further and more extensive research in this topic. Due to various challenges pertaining to logistics and confidentiality the sample size was limited and broader industry trends and

cultural characteristics could not be studied. The scores obtained may have been better interpreted with the aid of relevant benchmarks in the industry. The awareness of managers and leaders regarding the benefits and importance of involving human resource professionals in merger and acquisition deals may be investigated to identify the potential for improvements in the sector. Lastly, a more exhaustive longitudinal study may provide more conclusive results in this area.

### References

1. Anand, J., Capron, L., & Mitchell, W. (2005). Using acquisitions to access multinational diversity: thinking beyond the domestic versus cross-border M&A comparison. *Industrial and Corporate Change*, 14(2), 191-224.
2. Trautwein, F. (1990). Merger motives and merger prescriptions. *Strategic management journal*, 11(4), 283-295.
3. Christensen, C. M., McDonald, R., Altman, E. J., & Palmer, J. (2016). *Disruptive innovation: Intellectual history and future paths* (pp. 1-52). Cambridge, MA: Harvard Business School.
4. Marks, M. L., & Mirvis, P. H. (2001). Making mergers and acquisitions work: Strategic and psychological preparation. *Academy of Management Perspectives*, 15(2), 80-92.
5. Roll, R. (1986). The hubris hypothesis of corporate takeovers. *Journal of business*, 197-216.
6. A. Croft, "The Year in M&A: 'Super Mega' Deals and a Fourth-Quarter Surge Put Dealmakers on Top in 2019," *Fortune*, December 31, 2019. [Online]. Available: <https://fortune.com/2019/12/31/super-mega-mergers-deals-2019/>. [Accessed: 18- Apr-2020].
7. Angwin, D. (2007). Motive archetypes in mergers and acquisitions (M&A): the implications of a configurational approach to performance. In *Advances in mergers and acquisitions*. Emerald Group Publishing Limited.
8. Anderson, H. D., Marshall, B. R., & Wales, R. (2009). What is the relationship between investor protection legislation and target takeover returns? Evidence from Europe. *Journal of Multinational Financial Management*, 19(4), 291-305.
9. Tanna, S., Yousef, I., & Nnadi, M. (2020). Probability of mergers and acquisitions deal failure. *Journal of Financial Economic Policy*.
10. King, D. R., Dalton, D. R., Daily, C. M., & Covin, J. G. (2004). Meta-analyses of post-acquisition performance: Indications of unidentified moderators. *Strategic management journal*, 25(2), 187-200.
11. Haspeslagh, P. C., & Jemison, D. B. (1991). The challenge of renewal through acquisitions. *Planning review*.
12. Stahl, G. K., & Voight, A. (2004, August). Meta-Analyses Of The Performance Implications Of Cultural Differences In Mergers And Acquisitions. In *Academy of Management Proceedings* (Vol. 2004, No. 1, pp. 11-15). Briarcliff Manor, NY 10510: Academy of Management.
13. DeVoge, S., & Spreier, S. (1999). The soft realities of mergers. *Across the Board*, 36, 27-33.
14. Malhotra, B. (2020). A perceptual study on post-acquisitions leadership disruption on human resource factors. *International Journal of Business and Globalisation*, 26(3), 306-324.
15. M. Schraeder, and D. R. Self, "Enhancing the success of mergers and acquisitions: an organizational culture perspective," *Management Decision*, 2003.
16. Reddy, K. S. (2016). Regulatory framework of mergers and acquisitions: A review of

- Indian statutory compliances and policy recommendations. *International Journal of Law and Management*.
17. Singh, J. P., Kumar, N., & Uzma, S. H. (2011). The changing landscape of corporate governance framework in India. *International Journal of Indian Culture and Business Management*, 4(5), 506-522.
  18. Ahluwalia, M. S. (2002). Economic reforms in India since 1991: has gradualism worked?. *Journal of Economic perspectives*, 16(3), 67-88.
  19. Krueger, A. O. (Ed.). (2002). *Economic policy reforms and the Indian economy*. University of Chicago Press.
  20. Gaughan, P. A. (2010). *Mergers, acquisitions, and corporate restructurings*. John Wiley & Sons.
  21. Grant Thornton, "Annual Deal List, 2020," 2020. [Online]. Available: [https://www.grantthornton.in/globalassets/1.-member-firms/india/assets/pdfs/grant\\_thornton\\_annual\\_deallist\\_2020.pdf](https://www.grantthornton.in/globalassets/1.-member-firms/india/assets/pdfs/grant_thornton_annual_deallist_2020.pdf). [Accessed: 11- Mar-2020].
  22. Gupta, P. K., & Shallu, S. (2014). Evolving legal framework of corporate governance in India-Issues and challenges. *Juridical Tribune Journal= Tribuna Juridica*, 4(2), 240.
  23. Altaf, N., & Shah, F. A. (2018). Ownership concentration and firm performance in Indian firms: does investor protection quality matter?. *Journal of Indian Business Research*.
  24. The Institute of Chartered Accountants of India. (n.d.) *Mergers, Acquisitions & Restructuring*. [Online]. Available: [https://resource.cdn.icai.org/19356sm\\_sfm\\_finalnew\\_cp13.pdf](https://resource.cdn.icai.org/19356sm_sfm_finalnew_cp13.pdf)
  25. The Institute of Company Secretaries of India. (2017) *Corporate Restructuring, Valuations and Insolvency*. [Online]. Available: <https://www.icsi.edu/media/webmodules/PP-CRVI-2017%20-%20MARCH%207.pdf>
  26. Bower, J. L. (2001). Not all M&As are alike: And that matters.
  27. Karenfort, S. (2011). *Synergy in Mergers & Acquisitions: The Role of Business Relatedness*. BoD-Books on Demand.
  28. Bodner, J., & Capron, L. (2018). Post-merger integration. *Journal of Organization Design*, 7(1), 1-20.
  29. Puranam, P., & Vanneste, B. (2016). *Corporate strategy: Tools for analysis and decision-making*. Cambridge University Press.
  30. Weber, R. A., & Camerer, C. F. (2003). Cultural conflict and merger failure: An experimental approach. *Management science*, 49(4), 400-415.
  31. Horwitz, F. M., Anderssen, K., Bezuidenhout, A., Cohen, S., Kirsten, F., Mosoeunyane, K., ... & Van Heerden, A. (2002). Due diligence neglected: Managing human resources and organisational culture in mergers and acquisitions. *South African Journal of Business Management*, 33(1), 1-10.
  32. Yang, Y., Lütge, C., & Yang, H. (2019). Organisational culture affecting post-merger integration: new insights from Chinese reverse M&As in Germany. *Review of International Business and Strategy*.
  33. Nahavandi, A., & Malekzadeh, A. R. (1988). Acculturation in mergers and acquisitions. *Academy of management review*, 13(1), 79-90.
  34. Berry, J. W. (1983). Acculturation: A comparative analysis of alternative forms. *Perspectives in immigrant and minority education*, 5, 66-77.
  35. Cui, Y., Fu, X., & Zhang, Y. (2019, July). Research on the Mode of Cultural Integration After M&A—Based on Boundary Penetration Theory. In *International Conference on Knowledge Management in Organizations* (pp. 213-224). Springer, Cham.
  36. Bijlsma-Frankema, K. (2001). On managing cultural integration and cultural change processes in mergers and acquisitions. *Journal of European Industrial Training*.
  37. Bajaj, H. (2009). Organizational culture in bank mergers & acquisitions. *Indian Journal of Industrial Relations*, 229-242.
  38. Bhaskar, A. U., Bhal, K. T., & Mishra, B. (2012). Strategic HR integration and proactive communication during M&A: A

- study of Indian bank mergers. *Global Business Review*, 13(3), 407-419.
39. Bansal, A. (2015). Understanding the integration mechanisms practiced during organizational change: Evidence from five M & A transactions. *Journal of Organizational Change Management*.
40. Al Bustami, N. (2020). Case Study on Factors and Conditions Leading to Success in the Merger and Acquisition of Two Major Steel Manufacturing Companies in India.
41. Forehand, G. A., & Von Haller, G. (1964). Environmental variation in studies of organizational behavior. *Psychological bulletin*, 62(6), 361.
42. Schein, E. H. (1990). Organizational culture (Vol. 45, No. 2, p. 109). American Psychological Association.
43. Cameron, K. S. (1988). The conceptual foundation of organizational culture.
44. Schein, E. H., Shafritz, J. M., & Ott, J. S. (1985). Defining organisational culture, *Classics of Organisation Theory*.
45. Hatch, J. A. (2002). *Doing qualitative research in education settings*. Suny Press.
46. Braithwaite, J., Iedema, R. A., & Jorm, C. (2007). Trust, communication, theory of mind and the social brain hypothesis: deep explanations for what goes wrong in health care. *Journal of Health Organization and Management*.
47. Jung, T., Scott, T., Davies, H. T., Bower, P., Whalley, D., McNally, R., & Mannion, R. (2009). Instruments for exploring organizational culture: A review of the literature. *Public administration review*, 69(6), 1087-1096.
48. Kütt, M., & Rungi, M. (2014, December). In search of measuring organizational culture: ICT peculiarities. In 2014 IEEE International Conference on Industrial Engineering and Engineering Management (pp. 1438-1442). IEEE.
49. Pudil, P., Tripes, S., Somol, P., & Pirozek, P. (2014, March). Learning Approach for Selecting Key Organization Components Influencing Enterprises Performance. In *Academic Conferences International Limited* (pp. 222-227).
50. Cameron, K. S., & Quinn, R. E. (2011). *Diagnosing and changing organizational culture: Based on the competing values framework*. John Wiley & Sons.
51. Tashakkori, A., Teddlie, C., & Teddlie, C. B. (1998). *Mixed methodology: Combining qualitative and quantitative approaches* (Vol. 46). sage.
52. Tayeh, O. A., El-Hallaq, K., & Tayeh, B. A. (2018). The organizational culture of Gaza strip construction companies. *International Journal of Engineering and Management Research (IJEMR)*, 8(1), 40-64.
53. Frantz, T. L. (2017). *Dissecting Post-Merger Integration Risk: The PMI Risk Framework*. In *Advances in Mergers and Acquisitions*. Emerald Publishing Limited.
54. Budhwar, P. S., Varma, A., & Katou, A. A. (2009). The role of HR in cross-border mergers and acquisitions: The case of Indian pharmaceutical firms. *Multinational business review*.
55. Wang, M., Wu, R., Lin, J., Zhang, J., Fang, Z., Chai, Z., & Cheng, Y. (2019). Chemo-mechanical polish lithography: A pathway to low loss large-scale photonic integration on lithium niobate on insulator. *Quantum Engineering*, 1(1), e9.
56. Cheng, Y. (2019). Integration duration of post-merger and leverage dynamics of mergers: theory and evidence. *Pacific Accounting Review*.
57. Gutknecht, J., & Murkison, G. (1994). *Acquisitions, Takeovers, And Mergers: An Analysis Of Post - Action Effects On Attrition And Productivity*. *International Journal of Commerce and Management*.

**IMPACT OF COVID-19 ON PHARMACEUTICAL SECTOR IN INDIA****Dr. Ruby Chanda and Mainak Biswas**<sup>1,2</sup>Symbiosis Institute of Management Pune, India.  
ruby.chanda@sims.edu, mainak.pgdm1920@sims.edu**ABSTRACT**

*This paper studies the description of India's drug imports from China, dependence of its pharmaceutical industry on these imports and the impact of the Pharmaceutical Industry due to Covid – 19 pandemic results in reduction of supplies of bulk drugs from China. The largest materials India imports from China are Machineries, electrical appliances and chemical imports. Within organic chemicals two groups of products are very important. These are Heterocyclic Nitrogen Compounds and Antibiotics which are extensively used by the Indian Pharmaceutical Industry. This article will be helpful in understanding the Pharma sector challenges in changed scenario and provide insights to marketers for their strategic decision-making regarding production and distribution in present market conditions. The study is Original in nature and will have a conceptual framework on understanding the impact of pandemic on Pharma sector largely.*

**Keywords:** Covid-19, Active Pharmaceutical Ingredient, Bulk Drugs, Pharmaceutical Industry

**Introduction**

The origination of Corona virus disease (COVID-19) is from central China's Hubei province in Wuhan city during month of December 2019 which adversely affected more than 150 countries and is still continuing. The global tally of Coronavirus cases is 7,232,313 and 4,09437 people have died from the disease so far as reported on 9<sup>th</sup> of June, 2020. The Covid-19 outbreak has been mentioned as "Public Health Emergency of International Concern." by World Health Organization (WHO, 2020) on January 30<sup>th</sup>, 2020. During this time scientists has started working at a rapid rate to explain the features of the virus which includes origination, transmission and death rate. On the other side Government have tried to handle this situation by taking some appropriate actions :1) By imposing lockdown, 2) Communication of precautionary information about COVID – 19, 3) Tried to develop World Economy. As per the records the first case of the disease was happened on January 30,2020 in India. Since then the cases have started increasing steadily. India has registered 273,443 Coronavirus cases and 7,558 people died so far from the disease as reported on 9<sup>th</sup> of June, 2020. On March 25<sup>th</sup> 2020 the Government of India has imposed a lockdown all over the country to end the expansion of the Virus. It has been declared that during this period of the time that all means of travel will be stopped and so as the non-essential services and businesses

(Religious places, educational institutions, retail establishments and all the govt offices across the country).

The wealth of India was in a bad condition before coronavirus and so when this COVID-19 outbreaks, it act as an unparallel shock. Both consumption and investment have been impacted and the economic activity has been brought to a halt due to this complete lockdown of states and nationwide restrictions. The international dealing has come to standstill as the national borders by the countries are closed creating problems in the logistic network. Much of the damage arises from China's leading position in the global economy. Since China being the epicenter of the Coronavirus outbreak many countries including India have import dependence on China, are understanding adverse impacts.

One of India's key concerns in this regard is the impact on its Pharmaceutical sector.

In terms of volume India contributed 20 percent of the demand of global pharmaceuticals. India's fortress has been generic drugs and have contributed single handedly 70 percent to the total market profit in 2018. Between 2017 and 2060 the Indian healthcare and pharmaceuticals was expecting to grow by a massive 754 percent.

Firstly, India's biggest strength is its grip on the branded generics market. Unbranded drugs are produced outside the northern part of America; the secure number of United States FDA-approved plant lies with India. In 2015, around 21 billion U.S. dollars have been

earned by India through biosimilars in the prescribed drug market. The unbranded drugs are pharmacologically similar branded drugs which are having the same application, and other features of actual drug.

Secondly, medicines patient pool have been Un-backed by Six domestic firms, namely, Aurobindo, Cipla, Desano, Emcure, Hetero Labs and Laurus Labs in order to manufacture anti-AIDS medicine for over 112 countries within developing markets. In terms of Pharma production volumes India ranks 3<sup>rd</sup> globally but ranks 10<sup>th</sup> globally in terms of pharma production value. The drug prices from India manufactures are exceptionally low compare to global prices which has been secured by Health competition in the market and generic production. Moreover, this industry has many confined participants who have utilized this opportunity through early investments.

The government has shown interest in support the pharmaceutical sector by implementing different policies. The government has proposed several ideas directly by “**Pharma Vision 2020**” plan in company with the **DPCO** commenced in 2013 order to control drug prices and approvals. It will give rise to employment and further momentum to the sector is the vision of some manufacturing plants which will act as a framework covering the country. Due to the combination of this vision domestic companies will get a new boost along with Ayushman Bharat Yojana and increase in spending in healthcare sector and also increasing mutual agreements with pharma companies worldwide. In 2019, some important funding from foreign countries together with particular crucial M&A agreement is being done in the field as it creates a majestic record of over 1.3 trillion rupees of selling drugs and pharmaceuticals to the overseas market.

Because of the epidemic of coronavirus, the biggest drawback of the Indian pharma sector is exposed is that the country is rely on China for raw materials. To curb the spread of the virus global lockdown has been done which causes difficulty for India pharma companies to source essential drug molecules because supply chains to and from China got disrupted. As of March 2020, “China-plus-one” policy was implemented by the Indian government to

support production of essential raw materials within India by filling in supply gaps. According to the policy approx. more than 50 drug raw materials and API's are recognized to manufacture on preference by funding over approx. 1 billion U.S. dollars in local pharmaceutical firms and the production units supported by the states.

Numerous domestic firms like Glenmark, Sun Pharma and Alkem has led to a rush in market caps due to the coronavirus disaster. The potentiality of India as pharma heavyweight will be determined by how India tackles the disaster and also the competition to discover the vaccine for coronavirus is advancing.

This paper studies the description of India's drug imports from China, dependence of its pharmaceutical industry on these imports and the impact of the Pharmaceutical Industry due to COVID – 19 pandemic results in reduction of supplies of bulk drugs from China.

A. Indian Economy in Pre-Covid- 19 period  
The supply demand disruptions and diminishing of the economy has astonished all countries of the world. India's issue is more precise and deeper rooted due to the current scenario of the economy. There are three sections influenced due to the Coronavirus are:

- 1) Workforce: The government has directed its countrymen for home stay to restrict the spread of coronavirus. The production units which rely on other others for commodities are facing problem as the logistics are hampered due to coronavirus. Now, they are doing their work with less capacity of labors.
- 2) Products: The coronavirus has changed the ambitious scenario. Due to the logistics problem the distributors are losing their market share and also their customers because the customers are going for other options.
- 3) Costs: The costing expenditure of the goods are increased due to the transportation charges and also the problems in the logistics network. The production units are facing various obstacles like to maintain the safety of their workforce and also maintain the operative objectives.

Presently maximum units are engaged in organized ideas so that they can take up the

leadership role during disaster time for a time period. They are meeting obstacles which are -

- 1) Multiple level of logistic network should be created from the point of source and the end user and also substitute references should be managed to handle the situation.
- 2) There is a requirement of the calculation of the current stock which also comprises back up parts and also after transaction goods which is used a connection so that the operation is going on till the circumstances is managed.
- 3) During this time the requirements of some goods will fluctuate. Appropriate arrangements of the requirements should be done. Estimation plan of action should be done during this time period.
- 4) Enhancement of the yield and supply network should be maintained in the operations. It can be done by maintaining the protection of the workforce and educate them about the emergency circumstances and make an alternative at locality working.
- 5) The supply chain should be improved, which will help to calculate the volume and also can speed up in adaptability circumstances.
- 6) The disruption of the logistic network will create a huge impact on monetary terms so the capital of the industries should be maintained.

#### B. Sectoral Impact And Losses

1) Real Estate & Construction - The land and building sector continued to face problem in sponsors 2019 amidst the NBFC and banking sector issues. The economic slowdown worsened the situation resulting in poor housing demand. In last few years' episodes like demonetization and the establishment of the RERA and the GST has made some structural changes in the industry. The pandemic COVID-19 creates a crucial influence on the local land property market as yet given the expected collapse in demand. However prolonged impact of the coronavirus has favored the prospects of the real estate industry.

To reduce the impact of COVID- 19 on work like postponing the house enrolments, lessen sales goals in lining up with the present-day

actuality etc all possible estimation has been taken by the sector.

2) Agriculture & Food Processing - Coronavirus scare will adversely affect agriculture and allied activities sector and has already affected the poultry sector critically. India is the 3<sup>rd</sup> big egg production and 5<sup>th</sup> big broilers production country. Poultry sector is the fastest build up sub-sector of eco-system of Indian agriculture. This sector is already falling at the rate of 150-200 crore every day. Social network leaking out false information regarding COVID-19 outbreak for utilization of non-veg products which causes massive fall in order of poultry products. The farmers registered the prices have impacted to Rs 10-15/kilogram — while the cost for manufacturing was about Rs 70 – 80/ kilogram. From second week of April a large number of farmers will gathered at mandis once the arrival of Rabi crop happens. Preventive steps need to be taken to keep away from the virus in countryside.

3) Aviation – Aviation industries are in a turmoil during the coronavirus outbreak. As per the International Air Transport Association airlines can drop profit from the travelers of up to US\$ 113 billion globally because of pandemic. Air bookings have dropped also to nearly 30% to virus affected destinations. The growth of the national flights is hampered with local travelers deferred or abandon their travel schedules. The fares of the domestic flights have been reduced by 20-25% and beyond 30% fall in local travel this summer as compared to previous year. More-over the disaster could lead to unemployment as some aviation companies have asked many of their workers to take for indefinite period. Many aviation companies are at the verge of bankruptcy. The Government needs to give an urgent financial assistance to the airline industry.

4) Tourism, Hospitality & Medical Value Travel – A fall of 67% inward and 52% outward tourism from January to February due to mass cancellation of travel schedules by both international and national travelers comparing to last year. MICE segment i.e. the Meetings, Incentives, Conferences and Exhibitions of the hospitality sector has been hit the most among all segments. Some of the important international business occasions



comprising tech affairs such as Mobile World Congress (MWC), Google I/O, and Facebook's F8 event, have also been cancelled which lead to dropdown of huge economy. The tourism industry expects further reduction of the situation during March-June, normally it is seen that there is an increase in the number of national travelers in both within the country and outside the country locations in this period. However, during this time around 90% of hotel and flight bookings during the prime period is also been abandoned and also the cruise bookings for locations such as South Asian Countries. The restrictions on travel forced on international travelers by Mother India for a time may led to a huge drop of about Rs 8,500 crore to the hotel, aviation and travel sector altogether according to the Indian Association of Tour Operators (IATO). This will also have a deep impact on Medical Value Travel business

5) Retail - Economy, business and people have been severely hit by the epidemic of Coronavirus. Necessary preventive actions are being adopted by all retail players to secure protection of their workers and consumers. The main aim is to secure the continuous accessibility of crucial commodities at moderate costs to avoid panic amongst people. Retail firms cannot carry out for longer period due to the closure of malls which affecting businesses for all retailers leading to unemployment.

6) Transport & Logistics - Transport and logistics sector has also been impacted by the outbreak of coronavirus. Combination of urban lockdown and supply disruptions slows the economic activities which affects the transport sector revenues globally. Due to government advice for social distancing and work from home implementation, there is decrease passenger transport including metro and railways.

7) Financial Services & Fintech - To give help to the banking industry at the present-day measures are ready to be taken for supporting the fintech sector. Fintech appear as a foundation for the banking sector and have increased its importance in Digital marketing promotion when RBI is laying focus on it.

8) Automobiles – India imports 27% of automotive part from China and the market

leaders in automotive and engineering organizations such as Robert Bosch GmbH, Valeo AS and ZF Friedrichshafen AG having their warehouses in the Hubei regions. The shutdown of their warehouses has caused a hindrance in the manufacturing and supply of automobiles like Bharat Stage Four (BS-IV) compliant models

The decision taken by the Chinese government to restrict all loading consignments through sea for further notice has make the situation more dangerous. It is getting tough for the national OEMs to proceed with the objective of the manufacturing beyond the available stock because of non-satisfactory air consignments for Automotive parts and construction industries. According to Fitch Solutions there has been reduction in automobile manufacturing in India by approx. 8 % in 2020, thereby improving the decline estimation of approx. 13% in 2019. Consumers are cancelling their purchase of vehicles due to insecurity caused by the coronavirus. The accessibility of the BS-VI models has been impacted by the COVID-19 situation in China thereby concerning The Federation of Automobile Dealers Association and affecting the sector transformation.

9) Power – COVID-19 outbreak had a huge attack on power demand. As per the reports, there has been an increase in utilization growth by approx. 10% during month of February and starting of march 2020 and decline in power consumption by approx. (-3%). Government has taken some measures so that this pandemic does not extend further by closing shopping centers, plazas. This shutdown had a adverse negative impact on the revenue flow. Now the revenues charged around 90,000 crores from different sources of government administrations.

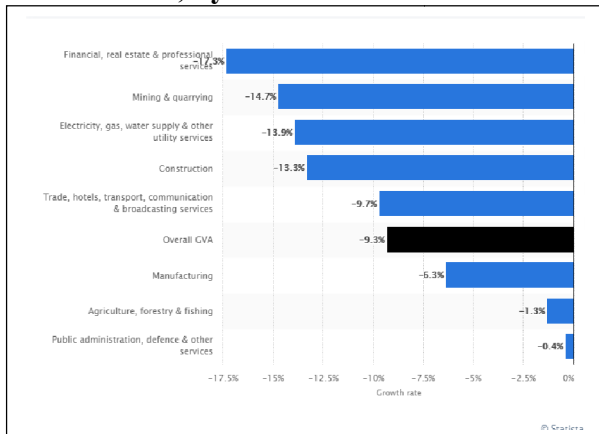
10) Ecommerce - The government has instructed the private MNC's and startups to initiate work from home culture for their employees to stop further spread of pandemic. E-commerce industry unexpectedly got hit by this sudden situation due to the dismissal of some operations. The main reason for their operations being rejected is the lockdown of cities by several state governments. Due to increase in supply of home delivery of goods,

the e-commerce business can dominate the present scenario.

11) Consumer Durables & Electronics- The dependency of India on China is approx. 45% for complete units of consumer durables. Air conditioners, refrigerators, washing machines and television components comprises approx. 70% of consumer durable products. The consumer durable items have been expanded at a rate of 3-5% in terms of price because of increase in TV panels as per the reports and some other components increased by more than 15%. All this occurs as the flow of supply got affected.

12) MSME - Continuation of lockdown for a longer duration will severely impact MSMEs. These will incur huge business losses. Large number people who are employed in this sector might lose their jobs due to disturbance in severe cash flow. The cash flow needs to be ensured into working capital of such enterprises from economic point of view else there will be a huge risk for their survival.

**Fig 1: Estimated Impact from the Coronavirus on India in the middle of April & June 2020, by Sector GVA**



13) Pharmaceutical Sector -Many Indian sectors are suffering due to shortage in supply of raw materials because of Coronavirus (COVID-19) outbreak. Among other sectors like Technology, Poultry, Automobiles, and Chemicals, Pharma sector is also badly affected.

Due to closure of China warehouses, the operations in India is becoming strong to keep the stock of Active Pharmaceutical Ingredients (API's is a key medicinal raw material). China is the major manufacturer and exporter of API's by volume in the world and Pharmaceutical companies acquire almost 70% from them.

India provide low cost generic drugs both internally and externally.

C) India's Dependency on China

China contributes of numerous products like basic materials, intermediated and end products to India. India dependent on goods from China are machineries, components, various electrical and non-electrical machineries, industrial appliances, machine parts and components. Among these, electrical machinery and equipment, and mechanical appliances imported from China made up around 45 % and 32 % respectively of total such imports by India during the year 2018- 19.

Beyond mechanical and engineering products and parts, India relies heavily on China for chemical imports. The organic chemicals, most important among them, are the third largest group in India's total contribution from China with a part of around 12 per cent. As mentioned earlier, for mechanical products and parts, India's organic chemical imports from China were around 38 per cent of its total organic chemical imports during 2018-19.

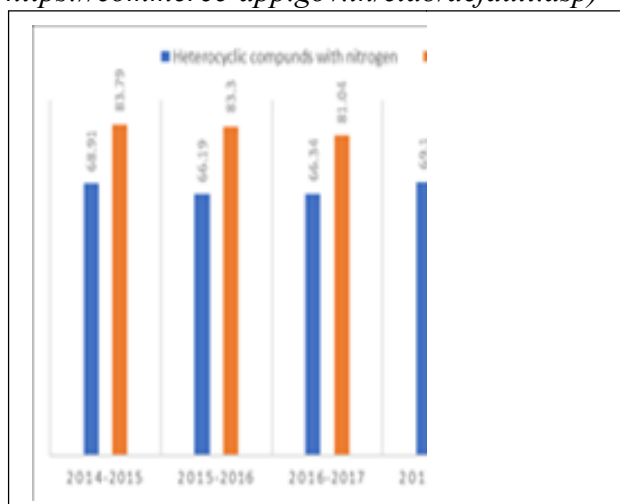
Within organic chemicals, two groups of products are particularly significant. These are heterocyclic nitrogen compounds and antibiotics, various items of both of which are extensively used by the Indian pharmaceutical industry.

The prominence of these impose in India's overall contribution from China is striking. At around US\$1.4 billion and US\$1.1 billion respectively, nitrogen compounds and antibiotics accounted for almost 30 per cent of India's total organic chemical imports of US\$8.5 billion from China in 2018-19. These two organic chemical sub-group of imports accounted for 2 % and 1.5 % respectively of India's total imports of US\$70.3 billion from China in 2018-19. Furthermore, India's imports of nitrogen compounds and antibiotics from China are 69 per cent and 76 per cent of its total such imports. This reveals the high degree of dependence India has on China for these products. In fact, the portion of these products imported from China is higher than most of India's major imports from China. India's largest contribution from China are electrical products and components. It sources 43 % of its total requirement of these items from China. Automatic data processing machines and units,

electronic circuits, and diodes and conductors are India's other most prominent imports from China. It sources 47 %, 32 % and 63 % respectively of its total requirements of these items from China.

A close look at the characters of the two prominent groups of imports underlines the reasons for the anxieties regarding the prospects of Indian pharmaceutical industry following supply disruptions. Heterocyclic nitrogen compounds are made up of carbon and nitrogen in their molecular structures and have extensive therapeutic use. The compounds are used in a large scale in pharmaceutical testing and drug determination. They are also significant in production of antibiotic formulations, and in anti-neoplastic, headache, anti-ulcer, anti-inflammatory, analgesic and anesthetic drugs. Antibiotics imported from China are widely used in the preparation antibiotic formulations for retail sale. Both products have extensive use as bulk drugs in India's pharmaceutical industry. During the last five years, that is, from 2014- IS to 20 I 8- 19, India's imports of both from China have remained significant (Figure 2)

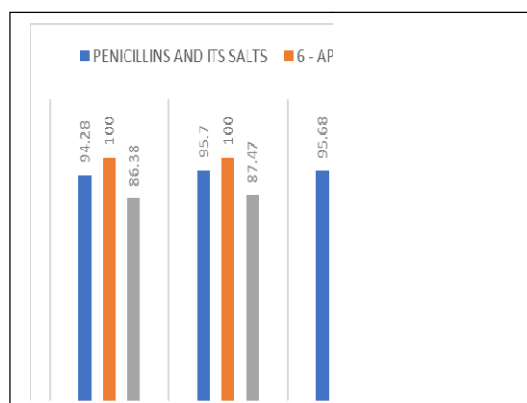
**Figure 2: Share of China (%) in India's Bulk Drug Imports**(Source: Export Import Data Bank, Department of Commerce, India, <https://commerce-app.gov.in/eidb/default.asp>)



India imports 70% of heterocyclic nitrogen compounds from China, of which more than 70 % of the total requirements, like the ones with unfused rings, are produced by China. Among antibiotic imports, the most significant ones are amoxicillin and its salts, rifampin and its salts, 6-APA ( 6- Amino penicillanic acid, a

chemical compound) and various other antibiotics. India imports furthermore 90 per cent of amoxicillin and its salts and also 70 percent of rifampicin salts from China, and almost all 6-APAs are only imported from China. (Figure 2).

**Figure 3: India's Major Antibiotic Imports from China (%)**(Source: Export Import Data Bank, Department of Commerce, India, <https://commerce-app.gov.in/eidb/default.asp>)



1) India, China & Pharmaceutical Value Chain: The various antibiotic and heterocyclic nitrogen compound imports from China associate China and India closely in the pharmaceutical value chain. In this regard, India's significantly rely on specific imports from China which defines a specific part of the value chain and the roles of Indian and Chinese producers therein. India's pharmaceutical contribution from China are in the form of bulk drugs. Antibiotic bulk drugs, for example, are in powder form and need to be processed into formulations for final consumption. Once processed as capsules or tablets, the particular bulk drug, which is the most prominent constituent of the composition, becomes its active pharmaceutical ingredient (API). Over the years, Indian pharmaceutical companies have achieved great proficiency in making formulations, their packaging and retail marketing. Such proficiencies have led to Indian pharmaceutical companies becoming the world's leading producer of generic drugs, which are cheaper formulations of branded drugs, once they go off-patent. Generic drugs manufactured by various Indian firms – Lupin, Dr. Reddy's Laboratories, Ranbaxy, Sun Pharma, Torrent, Glenmark and many others –

have obtained deep access in various global markets, given the price competitiveness of Indian generic formulations. However, the success has been largely enabled by the availability of cheap bulk drugs from China. From a value chain perspective, the downstream proficiencies of Indian pharmaceutical industry would have remained unutilized had it not been able to import the upstream raw drugs from China for use as APIs in formulations. This value chain has similarities with petroleum and automobile value chains. For both these value chains, Indian firms have developed commendable expertise at the downstream levels: in producing refined petroleum products and passenger and commercial vehicles respectively. For both though, the reliance on upstream imports is significant. The refined petroleum industry is heavily dependent on the import of crude oil, while the automobile industry is dependent on parts and components from abroad. In recent years, India has begun emerging as an important global location for assembling smartphones where again, a similar tendency of relying on imported components is noted.

The pharmaceutical industry's dependence on imported intermediates would have been much less had the same products been available at home. Unfortunately, several key APIs, including penicillin-G, streptomycin and tetracycline are not available in India. For many others, the lack of scale on the part of domestic manufacturers and the relatively higher cost of indigenously produced APIs make imported APIs from China much preferred options for formulation makers, in both volume and value.

2) Impact of Import Disruptions: Given the heavy reliance of the Indian pharmaceutical industry on bulk drugs from China, there are legitimate concerns over the adverse impact on domestic pharmaceutical production, as supplies from China get affected due to the outbreak of COVID-19. The concern is not just an apprehension for India. It is as much an anxiety for formulation drug makers in the US and other countries that hang on APIs from China. For Indian pharmaceutical producers, the effect would not be limited to their capacity to provide in the large domestic market, but

also ability to supply global markets through exports. The scale of disturbance caused by COVID-19 was unexpected. The scale of the pandemic caused a major shock to many of the economies of the world, including pharmaceutical industry not only in terms of its spread across borders, as well as the shrinkage of economic activity within China. As a result, the Indian pharmaceutical industry has not been able to keep sufficient stocks of imported bulk drugs. Most pharmaceutical companies keep an inventory of bulk drugs up to six weeks. Beginning mid/late January 2020, the time from when COVID-19 began assuming highly fatal proportions in China with serious impact on domestic production and supply of imports, the inventories with Indian producers should last up to February/March 2020 for most drugs they use in formulations. Therefore, formulation production would be affected if supplies failed. There are already some signs of panic creeping in with the prices of some common formulations, such as those using paracetamol as API in common over-the-counter formulations like crocin and pyrilgesic, beginning to rise, in forecasting of their inevitable low domestic availabilities.

Indeed, even before an actual decline in imports of bulk drugs, supply disruptions are likely with shipments arriving from China facing clearance issues at Indian ports. Necessary documents to obtain cargo clearance at Indian customs are taking too long to arrive from China, as a result container arriving from different Chinese ports are lying unloaded or facing long delays in offloading at Indian ports. Due to this remain in Indian ports, bulk drug distributors are failing to refill existing inventory – an issue that is likely to aggravate if COVID-19 sets in deeper in China.

### **Literature Review**

The study is based on the sociological impacts of COVID – 19 Pandemic (Niranjan Majhi, April 2020, p 210-216). The study shows how the social life is affected due to outbreak of pandemic Coronavirus. The study reveals outburst situation has led to complete lockdown and social distancing in most of the national and international communities as a result many social and economic issues have evolved due to eruption of Corona Virus.

Also, the economic impact of COVID – 19 Pandemic on private Health Care Sector in India has been evaluated. (Dr Revathi Anandkumar, April 2020, p 240-246) . Impact of COVID-19 Pandemic on Tourism Sector is also being investigated (M/s Manjiri D. Kalyankar ; M/s Priyanka Patil., April 2020,p 611-617 ) The paper is an effort made to study the contribution of Tourism Sector in the economic development of the country . COVID – 19 outbreak affecting leading pharmaceutical stocks listed with the National Stock Exchange of India is being studied. (Arvind M; Manojkrishnan C G., 2020, p 31-36). Effects of Coronavirus disease (COVID – 19) on Tourism industry of India is evaluated ( Karishma S.Kasare. (February 2020, p 362-365). Impact of COVID – 19 on India is studied. (Dr Venkateshwara., March 2020, p 1581-1589). The paper highlights the awareness, attitude and self-discipline about COVID – 19 among the public in India and contain viral transmission of COVID – 19 in India. COVID – 19 crisis in India is investigated (Marine Al Dahdah ; Mathieu Ferry ; Isabelle Guerin and Govindan Venkatasubramanian. ,13 April 2020). . The investigation on the research and reports on the global economic impacts of the COVID-19 ‘new coronavirus’ has been done (Prof Shlomo Maital ; Ella Barzani. March 2020). The evaluation of the consequences of COVID-19 on the global supply of medicinal products is performed. (Philippe J Guerin; Sauman Singh-Phulgenda and Nathalie Strub -Wourgaft. , 07 April 2020). The Impact of Coronavirus on Indian economy is studied. (Rekha Rani. March 2020, p 3618-3626) The paper discusses on the effect of coronavirus on Indian economy and precautionary measures taken to combat corona. The investigation on the impact of Coronavirus on Indian economy is done (Sunil Kumar; Pratibha B Thom bare and Pandurang., April 2020, p 301-302).. The COVID – 19 issue in India and its impact on the Tourism and Hotel industry is investigated (Vineet Kumar, 2020, p 179-185). Investigation on the Novel Coronavirus Outbreak and the risks for Indian Pharmaceutical Industry is performed (Amitendu Palit., 1 March 2020). The societal impact of novel coronavirus (COVID-19 ) pandemic is studied (Bhargabi Kundu ; Dipak

Bhowmik, 27 April 2020) The aim of this research is to have a clear understanding of the present societal structure during lockdown which may help the government for better management and elimination of the disease. The evaluation of the Impact of Coronavirus on the breakdown of business and workers in India is performed. (Himanshu Koshle; Rabab Kaur and Ruchi Basista.,20 March 2020). Description of the condition of the Indian economy in the pre-Covid 19 period, evaluate the potential effect of the shock on various segments of the economy, inspect the policies that have been announced so far by the central government and the Reserve bank of India to improve the economic shock and put forward a set of policy recommendations for specific sectors has been done (S. Mahendra Dev, Rajeswari Sengupta., April 2020). Description on the present scenario of business and economic recessions in India during the COVID-19 is performed (Dr S. Gunaseelan; Dr N. Kesavan , 2020 p 356-366). Effect of COVID-19 on Indian economy and the Supply Chains in India is studied (Shruti Agarwal; Anbesh Jamwal and Sumit Gupta., 9 May 2020). The Impact of Novel Coronavirus (COVID – 19) on the Real Estate Sector of India is studied (Jayasree Venkitachalam , March 2020, p 211-215). The Socio-Economic suggestions of the Coronavirus Pandemic (COVID – 19) is also being studied (Maria Nicola; Zaid Alsafi; Catrin Sahrabi; Ahmed Kerwan; AhmedAl-Jabir Christos Iosifiis; Maliha Agha and Riaz Agha.,2020 p 185-193). The Healthcare influence of the COVID-19 Epidemic in India is studied (Kaustuv Chatterjee; Kaushik Chatterjee; Arun Kumar and Subramanian Shankar.,2020, p 147-155). The COVID-19’s disruption of India’s Transformed Food Supply Chains is described (Thomas Reardon; Ashok Mishra; Chandra S R Nuthalapati; Marc F Bellemare and David Zilberman. (02 May 2020).

### Objective Of The Study

This paper studies the description of import of drug from China by India, dependence of its pharmaceutical industry on these imports and the impact of the Pharmaceutical sector due to COVID – 19 pandemic results in reduction of supplies of bulk drugs from China.

### Research Methodology

This is a quantitative study which is substantially using Secondary Data which was descriptive in nature. It was collected from the survey reports & study reports by various agencies like WHO, CRISIL, FICCI, DELOITTE, CARE Ratings, ERNST & YOUNG, CRS, KPMG and McKinsey & Company for detail study. I have chosen the reports mostly published in March and April months to understand the effect of COVID – 19 on the economy of India and various sectors. Also, I have studied few research papers, journals, news articles which publish in these two months.

### Limitations Of The Study

Since the Pandemic Corona disease is not fully decreased in India, the exact impact of this on any sector is not possible to measure. There is not a single sector which this virus untouched, the study only on Pharmaceutical sector may not be macro on its effect. The fluctuations in the data and sector wise changes can occur till full curtailment happens and that is unpredictable at this stage.

### Results & Analysis

#### A. Options Available for India for managing the Supply Disruption

According to European Pharmaceutical Review Article, there are two possible actions India can take. The Department of Pharmaceuticals in the Ministry of Chemicals has recommended restricting exports of around a dozen APIs that India imports from China, and their formulations, following suggestions by an expert committee set up by the ministry. The apparent idea is to preserve as much of the APIs and their final products for domestic consumption as possible. At the same time, there are efforts to ramp up domestic production of bulk drugs on which India's dependence on imports from China is critical. However, these efforts are yet to formalize into a specific strategy. Even if a formal strategy is put in place quickly, the results are going to become visible only much later. Achieving higher volumes of bulk drugs at competitive prices at home from producers crippled by the lack of scale and difficult business conditions is a tall task.

The other option for India is to explore the possibility of sourcing the APIs it obtains from China from other countries. Compounds containing nitrogenous derivatives and antibiotics are notably transported by some European countries – Ireland, Belgium, Switzerland – and the United States. It is not going to be easy to affect a quick switch though. The global demand for bulk drugs from non-China locations is going to increase rapidly as additional countries goes to other places to make up insufficient distribution from China. The higher demand is going to impact bulk drug supplies and prices, reflecting in a concomitant impact on prices of formulations.

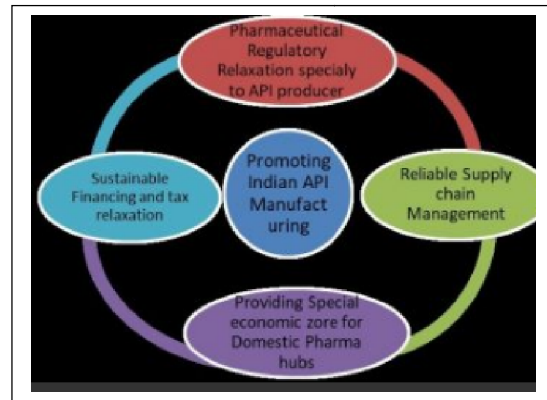
Due to extensive growth in formula development and globalization of pharma companies of India, the purchase of API from China increased. The pharma companies of India imported a minor amount of only 0.3 percent of its APIs from China since 1991. Low production cost is the primary drive. National health security is getting concerned because the pharmaceutical companies of India are currently dependent on Chinese APIs and taskforce needs to be arranged for analyzing internal API sector. Some key representatives from the pharmaceutical industry including NITI Aayog (a policy workshop for the GOVT of INDIA) suggested that factors which benefits the market are: inspiring the consent of progressing pharmaceutical framework, authorization from the Ministry of Environment and Forests (MoEF) and easing tax and supplementary, for the enhancement of the pharma companies.

#### B. Strategies for promoting API production

The Indian government should initiate some important steps to abolish the practical and monetary blockage that has inspired the production of API by pharmacy sectors. Chinese market also got affected in current scenario due to decrease in reliance of pharma sectors. An exceptional action was taken by the Indian government by suggesting an encouraging collection of approx. 14 billion Indian Rupees for motivating domestic production of crucial materials, intermediated medicines, API's and instruments used in medical science. Due to easy access of massive manpower and labor force and modern technologies, the pharmaceutical sector is

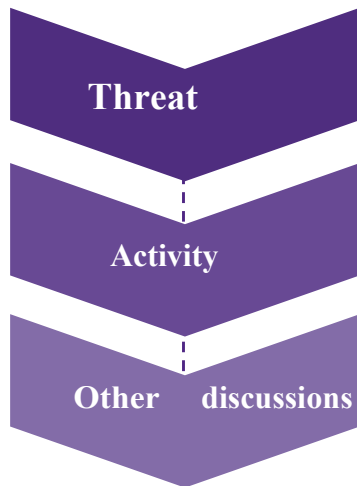
dominated by India in the developed countries like US and Europe.

**Figure 4: Steps Proposed for Indian Governments**



**Discussion & Recommendation**

**A. API Manufacturing in India: The Fine Print**



- Company’s logistics network is relied on majority products from China should be examined.
- Vital listing of components and associated surplus of goods plan of action should be verified
- Miniature should be interrupted
- To balance challenges in maintaining utilization volume should be scale up.
- For scaling up of quality functions production and infrastructure should be changed.
- Designing of product in view of possibility on account of non-fulfillment to contribute should be optimized.
- Different origin of allocation should be advanced.
- Facilities in Pre-reservation in sea and air cargo should be enhanced.
- In Vertical integration investment should be done to set self-dependent in production on some supplies
- For getting the supplies first in hand working capital requirements should be managed.
- Unavoidable casualty requirement in stock agreement should be relooked.
- Unoccupied measurements to additional manufacturing should be identified.
- Assumption of extended obstruction disaster recovery should be planned.
- Particular source of stock from China (Wuhan, Hubei, Guangdong, etc.) should be recognized.
- Listing of specification for following six months should be determined.

**B. Cure from COVID – 19: Scope for Indian Companies**

Around 50 major pharma companies round the world are in a competition at present to develop a medicine for the COVID — 19 diseases. After the launch of the drug, The Indian Institute of Chemical Technology

(IICT) investigators declared that their objective is to generate the technology and proceed it to Indian Pharmaceutical companies for bulk production. In case the pharmaceutical companies determine to sell their drug at a large price, such revolution will help in decreasing the price of the

COVID — 19 drugs. If the companies look the other way of sharing the drug technology in India, Parliament has the legal authority to provide “compulsory licensing” policy, which will authorize premium laboratories like IICT (Indian Institute of Chemical Technology) to create the drug.

### Conclusion

India faces the prospect of disturbances in domestic accessibility and export of generic drugs and formulations as it imagines the near possibility of bulk drug and intermediate supplies from China choking off. This is an unavoidable outcome of the character of the pharmaceutical value chain that embeds Indian pharmaceutical producers and consumers to China in an inextricable manner. The economic impact of production cutbacks in China following COVID-19 and its rapid spread would extend significantly to the rest of the world, including India.

The capacity to provide superior medicines along with strong revolution capabilities and organizational cost has eased India’s powerful situation as a pharma supplier. Irrespective of low productivity levels, India’s value of manufacturing formulations remains 30-40 percent below

This is managed by lower employee compensation with regards to other geographies. If Indian companies can upgrade productivity through distinct operations and digital capability, India’s labor cost dominance will assist in the medium to long term. The offerings done by pharma or science graduates into the pharma industry is powerful in India than others like China. Indian pharmaceutical organizations are in a race into production of complex products (e.g., microparticles, vesicles, demulcent), R&D establishment capacities and quality production of these products.

The particular challenges faced by the industry supplying to export markets are :-

- Profitability and margins are crushed due to increased pressure in price. The main drivers are customer integration, commoditized rivalry, products are manufactured easily with approved ANDA and new launches are falling down.
- Dependability of the supply is affected by

the compliance resulting in rise of another crucial question. Last year many Indian companies seem to be come out of remediation as they have maintained a good relation in regulatory audits. So now others have taken up the challenges.

Dependence of India on imports of key starting materials, intermediated and APIs for, China with the portion of reliance have increased over time. As a result of which we have been exposed raw material supply disturbances and pricing volatility.

Three preferable areas for Indian pharmaceutical companies

- Re-focus attempt on operational excellence.
- Build stronger quality systems and reach full compliance.
- Different sourcing and self-sufficiency in APIs / intermediated

The government can take part an important role to help the sector to become independent APIs/intermediates. The govt can help in developing three to five dedicated clusters countrywide for the API / intermediate industry resulting in profits which includes sponsoring the real estate and benefits, regular funds for sewage treatment, quality review, etc. for betterment of Indian players. Contribution of additional incentives to players for R&D investments could help it further in these areas. It could also permit educational institutions and the sectors controlled by the state to help in funding in this scope for such research.

We believe that the Indian Pharma sector will have greater opportunities, thereby allowing the sector exceed greater heights and secures India’s position as a Pharma hub amongst this challenging and transformation period.

### Managerial Implications

The progress can be resumed by starting the clinical studies which are disconnected or detained, additional partners and examiners are reemployed, prioritizing of folder and appropriate assignment of short funds, Investment should be done first to those that will provide the highest value and recognition of the trials that gives delayed result. Commercial efforts can be increased by



launching the delayed products, starting of field efforts in a synchronize manner. Acceleration of COVID 19 helps in growing of industry trends such as telehealth and remote medical engagement.

. Importance should be given on restructuring the company's field force and capabilities. The promotion of digitalizing the value chain needs to be done. Also for utilizing COVID 19 emergency. learnings, areas like customer engagement, real-time supply chain monitoring and digitalization of clinical development needs to be promoted as well. Ideas and prediction based on prospecting scenarios should be reviewed accordingly with portfolio movement in R&D and commercial and also the modification of the layout of the cost needs to be done. Financial targets can be achieved by finding possible investments and low estimations, particularly in biotech. Byproducts, firms and policies that are part of the everlasting strategy are analyzed. Multi referencing for serious

products such as active pharmaceutical ingredients (APIs) and excipients should be examined. To provide sufficient support there should be some estimated limit of possibilities to the company's sourcing and manufacturing footstep in case of future disturbances. Artificial Intelligence and lower managerial costs, especially those related to past investment should be funded. New openings in anti-infective and antiviral medications should be explored. Obstacles to market gain can be reduced and investigation sponsors can be increased by expansion of demand in remedial solutions for future outbreaks.

As management forces are aware that the pharma sector is on the lead position of a fight to face the global outbreak. To set the correct preferences today can help firms speed up their transformation which will make a certain stable supply of urgently needed drugs for patients who are suffering from Covid-19 directly and indirectly.

### References

1. Al Dahdah, M., Ferry, M., Guérin, I., & Venkatasubramanian, G. (2020). The Covid-19 Crisis in India.
2. Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., ... & Agha, R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *International journal of surgery*, 78, 185-193.
3. Anandkumar, Revathi. "The Economic Impact Of Covid-19 Pandemic On Private Health Care Sector In India." *Clio An Annual Interdisciplinary Journal of History* 6, no. 6 (2020): 240-246.
4. Agrawal, S., Jamwal, A., & Gupta, S. (2020). Effect of COVID-19 on the Indian economy and supply chain.
5. Aravind, M., & Manojkrishnan, C. G. (2020). COVID 19: Effect on leading pharmaceutical stocks listed with NSE. *Int. J. Res. Pharm. Sci.*, 31-36.
6. Chatterjee, K., Chatterjee, K., Kumar, A., & Shankar, S. (2020). Healthcare impact of COVID-19 epidemic in India: A stochastic mathematical model. *Medical Journal Armed Forces India*, 76(2), 147-155.
7. Dev, S. M., & Sengupta, R. (2020). Covid-19: Impact on the Indian economy. *Indira Gandhi Institute of Development Research, Mumbai* April.
8. Deloitte POV " Impact of covid-19 on indian business in india", <https://www2.deloitte.com/content/dam/Deloitte/in/Documents/consumer-business/in-consumer-impact-of-covid-19-on-consumer-business-in-india-noexp.pdf>, 30 March 2020.
9. Guerin, P. J., Singh-Phulgenda, S., & Strub-Wourgaft, N. (2020). The consequence of COVID-19 on the global supply of medical products: Why Indian generics matter for the world?. *F1000Research*, 9.
10. Gunaseelan, S., & Kesavan, N. (2020). Business and economic recessions in India during the Covid-19—a review. *Journal of Xi'an University of Architecture & Technology*, 12.
11. Gupta, R., & Madgavkar, A. (2020). Getting ahead of coronavirus: Saving lives and livelihoods in India. *Mckinsey* Retrieved from <https://www.mckinsey.com/featured-insights/india/getting->

- ahead-of-coronavirus-saving-lives-and-livelihoods-in-india.
12. Grant Thornton. An Instinct for Growth , “Coronavirus: economic impact and the road ahead.”, <https://www.grantthornton.in/insights/articles/coronavirus-economic-impact-and-the-road-ahead/>, 13 March 2020.
  13. Upadhye, N., & Sathe, S. (2021). Challenges faced by speciality restaurants in Pune City to retain employees during and post COVID-19.
  14. Kasare, K. S. (2020). Effects of coronavirus disease (COVID-19) on Tourism Industry of India. *Studies in Indian Place Names*, 40(35), 362-365.
  15. Koshle, H., Kaur, R., & Basista, R. (2020). Breakdown of business and workers in India: impact of corona virus. Available at SSRN 3557544.
  16. [16] Kumar, S., Thombare, P. B., & Kale, P. A. (2020). Impact of coronavirus (COVID-19) on Indian economy. *Agriculture & Food*, 2(4), 301-302.
  17. Kumar, V. (2020). Indian tourism industry and COVID-19: present scenario. *Journal of Tourism and Hospitality Education*, 10, 179-185.
  18. Kundu, B., & Bhowmik, D. (2020). Societal impact of novel corona virus (COVID-19 pandemic) in India.
  19. Madan Sabnavis, Care Ratings. Survey on ‘Impact of the corona virus on the indian economy’ [www.careratings.com/economic-impact-of-coronavirus.](http://www.careratings.com/economic-impact-of-coronavirus.), March 16 2020
  20. Majhi, Niranjana. "The Sociology of COVID-19 Pandemic." Tathapi with ISSN 2320-0693 is an UGC CARE Journal 19, no. 4 (2020): 210-216.
  21. Maital, S., & Barzani, E. (2020). The global economic impact of COVID-19: A summary of research. Samuel Neaman Institute for National Policy Research, 2020, 1-12.
  22. Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., ... & Agha, R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *International journal of surgery*, 78, 185-193.
  23. Palit. Amitendu “The novel coronavirus outbreak : risk’s for india’s pharmaceutical industry”, ISAS Insights. No 599, 1 March 2020.
  24. Pinakiranjan Mishra , Ernst & Young , “Moving towards a resilient retail sector post covid-19”, [https://www.ey.com/en\\_in/consumer-products-retail/moving-towards-a-resilient-retail-sector-post-covid-19](https://www.ey.com/en_in/consumer-products-retail/moving-towards-a-resilient-retail-sector-post-covid-19), 22 April 2020.
  25. Saini, R. (2020). Impact of Corona Virus on Indian Economy. Available at SSRN 3595300.
  26. Reardon, T., Mishra, A., Nuthalapati, C. S., Bellemare, M. F., & Zilberman, D. (2020). COVID-19’s disruption of India’s transformed food supply chains. *Economic and Political Weekly*, 55(18), 18-22.
  27. Toope, S. J. (2010). Federation of Indian chambers of commerce and industry higher education summit.
  28. Venkitachalam, Jayasree. "Impact of Novel Corona Virus [Covid 19] on the Real Estate Sector of India." *Studies in Indian Place Names* 40, no. 73 (2020): 211-215.
  29. Tekwani, K., & Raghuvanshi, R. (2020). GST Relief Measures During Global Pandemic (Covid-19). *The Management Accountant Journal*, 55(7), 54-57.
  30. Weiss, M., Schwarzenberg, A., Nelson, R., Sutter, K. M., & Sutherland, M. D. (2020). Global economic effects of COVID-19. Congressional Research Service.
  31. Patnaik, I., & Sengupta, R. (2020). Impact of Covid-19 on the Indian Economy. *Indian Public Policy Review*, 1(1 (Sep-Oct)), 41-52.
  32. Shetty, G., Nougaraahiya, S., Mandloi, D., & Sarsodia, T. (2020). COVID-19 and global commerce: An analysis of FMCG, and retail industries of tomorrow. *International Journal of Current Research and Review*, 12(17), 23-31.
  33. World Health Organization “Coronavirus disease dashboard” <https://www.who.int/emergencies/diseases/novel-coronavirus->

- 2019?gclid=EAIaIQobChMIiqm4u7Ka6gIVzjUrCh0vhgN-EAAYASAAEgLa3\_D\_BwE, June 2020.
34. Loïc Plantevin, Jason Evers and George Eliadeshttps. “A covid-19 action plan for pharma executives”,://www.bain.com/insights/a-covid-19-action-plan-for-pharma/
35. Dr Abhishek Dadhich (22 April 2020). European Pharmaceutical Review. “The covid-19 pandemic and the indian pharmaceutical industry.”
36. <https://www.europeanpharmaceuticalreview.com/article/117413/the-covid-19-pandemic-and-the-indian-pharmaceutical-industry/>
37. Amexx Technologies, “Impact of covid-19 on pharmaceutical industry” <https://www.ameexusa.com/blogs/covid-19-impact-on-pharmaceutical-industry>.

## CLAIMS AND DISPUTE MANAGEMENT IN THE CONTRACTS OF INFRASTRUCTURE PROJECTS

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### ABSTRACT

*Infrastructure projects have long construction periods and are subject to more claims than any other industry. This paper war causes hinderance in completion of the project, often resulting in untimely delays. The major types of claims that occur in construction projects are explained in detail. The intention of this paper is to seek how one could minimize the damage that occurs through major claims and seek its resolution in minimum amount of time. Additionally, this study will take step by step approach in identifying and analyzing the grounds for claims as under:*

- 1. The provisions in a model contract to raise a claim.*
  - 2. Categorization of claims from design to execution stage.*
  - 3. Grounds for raising claims beyond the contract and justified under law.*
  - 4. Resisting and denying claims.*
  - 5. Claims turning into disputes.*
  - 6. Grounds for raising claim if the contract itself is unbalanced towards a single party.*
- The methodology involves circulating a questionnaire among various stakeholders including peers working in the field of construction and or interviews to analyze market research on claims to supplement the survey results. This analysis shall assist in prevention of claims and minimizing delays and cost overruns in construction projects.*

**Keywords:** Claims, Construction, Disputes, Infrastructure, Contracts

### Introduction

Construction industry is the second largest industry in India succeeding Agriculture [1] and that is for a fact that infrastructure is the backbone for any country's economy. Many construction projects take a toll of 30% to 40% overrun in cost due to time delays which is because of frequent disputes and slow arbitration process between contractor and owner. Contracts are designed to resolve conflicts. Therefore, a fitting contract allocate risks between owners, contractors and consultants. A clear future road map if not managed properly can lead to many claims resulting in delay and or cost overrun in a project or sometimes calling off the contract. Disputes arises when claims cannot not be resolved while claims emerge because of improper conflict management. Crucial stage for claim management is the planning process where the concept is changed for the project or delays in reaching the final design which can be caused because of different opinion among stakeholders. Disputes generally comes into project due to poor communication, changes in scope and ambiguous contract documents. In laymen terms a claim is "a request, demand, or assertion of rights by a seller against a buyer,

or vice versa, for consideration, compensation, or payment under the terms of a legally binding contract, such as for a disputed change" [2]. To eliminate the problem of rising claim in construction projects one should know what are the major claims that occur and why these claims arises. The major claims in infrastructure projects are Delay claims, acceleration in price claims, change of work or the scope of the project, Inclusion of new work in the same project, Different site condition claims, Damage to the property claims, Loss of profit claims, wrongful withholding of deposits claims (Shah, 2014). Claims can be made by any stakeholder of the project, generally there are three stakeholders as the owner of the project, contractor who has been assigned to complete the project and the consultant of the project. There is a procedure that has to be followed to file a claim and stipulated timeframe is also provided for filing a claim. Many contracts abide by the rules of fidic books mainly RED book (designed by employer), SILVER book for turnkey projects and ORANGE book for build and turnkey projects [3]. But still contracts have a loophole for the claims to arise, many researches and theories have been made already but there are many perspectives

concerning many stakeholders when it comes to a contract and the difference in understanding of a clause for different people plays a vital role in constructing a claim.

In forthcoming time infrastructure is going to increase rapidly [4]. Amidst the pandemic of COVID-19 also building new infrastructure after the relaxation in lockdown process was key focus for the government (News, 2020). The worsening condition of migrant workers also indicates that government will focus their schemes to infrastructure to provide them with their livelihood and the fall in real estate pricing will help in new construction as well. This is visible to everyone that infrastructure will gain more focus and will also attract more investors from outside India which will complicate the process for claims and disputes as multiple nation's government will be involved [5]. To smoothen the process a concrete solution to avoid or deal with these issues is required without hampering the growth and working of a project. In this case when the same industry is expecting a tremendous growth, this paper is trying to look deep into contract conditions and cover the loop holes which gives rise to claims and further into disputes. The paper conclusively prepares recommendations to avoid or diminish disputes which can be used in contract conditions. There are many researches which refers disputes as an inevitable constraint in smooth less operation of a project or as a problem which requires a resolution between the concerning parties, some view it as a mere difference in perspective of the stakeholders but all these views centers disputes as a conflict [6]. Every stakeholder wants to fulfill their own interest over the others and tries to gain most out of the situation which creates a difference in the perspective.

While everything before was concerned about problem of why to resolve the dispute rather than how to resolve the dispute this paper will focus on the followings:

I. The provisions in a model contract where claims are allowed to be raised and why this provision is important as it will be unfair for some concerning parties to not to be allowed to raise a claim. So, it is important to have the provision of raising a claim but it is also important to know when a claim can be raised and how it will be resolved and also

process to avoid this from converting into a dispute that is if required a quick arbitration process is needed.

II. Categorization of claims will play a vital role in resolving them, if claims are pre-classified into different categories on the basis of stages of work that is from design stage to execution stage then it will reduce the lead time to resolve a claim. For example, a claim from design has to be made before the end of planning stage which will smoothen the process further and no hinderance in work will take place during execution stage leading to no time and cost delay during the project.

III. Grounds for raising a claim beyond contract and justified under law as it can be inferred easily that not all claims can be foreseen and put under a category or get mentioned in the contract so a process of raising such claims under the influence of the law and proper channels to be constructed for these kinds of claims for them to be quickly raised and resolved quickly.

IV. Resisting and denying claims is a part of the process which is essential because not all claims are needed to be addressed by committee so a definition including the instruction for denying a claim is the be set and mentioned in the contract which will help in reducing the number of claims to be resolved and also will not allow either party to raise a nuance claim. It is important to address these claims as there can be many claims which are out of scope and cause hindrance in the work.

V. Claims turning into a dispute is a nightmare for any construction project especially in the early stage of construction [7]. It will increase the construction time exponentially and will lead to increase in project cost even before the starting of the project so they are bound to be resolved quickly and effectively. Similar provisions are to be made in the contract to deal with a claim and stop it from converting it into a dispute. These provisions are to be made carefully so that they do not give an unfair advantage to any concerning party over other.

VI. Grounds for raising a claim when the contract is itself biased towards a single party. Many a times contracts are made and signed in a haste due to many unseen reason mainly due to time constraint, These contracts are mostly

biased towards the stakeholder who made the contract, so if this happens then conclusive grounds are required to raise a claim to either change the contract itself or some parts of the contract which needs judicially correct arbitration process and also it has to be make sure that this process do does not involve in consuming too much time or even extermination of the project itself.

VII. Dispute resolution by arbitration: After all the precaution if any claim cannot be resolved and prolonged enough to be considered as a dispute than a proper arbitration system has to be made in advance to resolve this kind of dispute which will consist of arbitrators from both the side and also an arbitrator who is not concerned with an interested part and whose sole purpose is the resolve the dispute unbiasedly with good intentions of completing the project in time.

The most followed General Conditions of Contracts provided by CPWD provides the basic framework to avoid above mentioned problems but it has not been well researched and redeveloped timely thus its efficiency in current time is diminished and allows the break ins to develop claims and disputes, it needs to be realigned with the International structures and maintained thoroughly. This study will provide suggestions for the claim management process consisting of claim notification, claim recognition, claim testing, claim documentation, claim examination, claim presentation, claim planning, claim negotiation, and claim execution and if incorporated will surely reduce the above-mentioned problems to an extent.

### Literature Review

Infrastructure sector experiences most claims and disputes in all stages of life cycle of a project.

1. Stage 1: Project initiation and designing- This stage often requires more time and cost than usually provided, lack of importance and negligence results higher number of claims in the later stages.

2. Stage 2: Procurement and designing of contracts- This stage also suffers from inadequacy of time and man power because it doesn't have foreseeable output to the process.

3. Stage 3: Execution of project- This stage takes most of the time and suffers most time delay and cost delay claims due to

4. Stage 4: Post completion or project operation- This stage suffers with most miscellaneous claims and these claims mostly leads to disputes followed by arbitration which results in cost escalation of project. [8]

Disputes are typical and unavoidable in most improvement in light of number of weaknesses that may occur. According to various researchers like [9] and [10]. Inquiries generally develops as a result of ambiguity in contract files, change of degree with vulnerable correspondence. The inquiries similarly have starting in the way legitimately restricting issue through cases [11]. Contemporary advancement adventures obtain complexities as plan entrapments, new regions of progress not known to expand substances before which prompts more weaknesses and risks. Such exercises by then require figured out organizing, booking and complex legitimate and lawfully restricting documents.

The paper essentially bases on portraying questions and claims, an other examination revolves around kinds of discussions and cases. For example, referred to six remarkable sorts of advancement discusses: change of degree, change conditions, delay, aggravation, speeding up and end. Additionally, separated seven viably affirmed sorts of advancement question: contract terms, portions, assortments, extensions of time, assignment, re-task and availability of information. Also, researchers have furthermore raised the purposes behind the inquiries. According to people, cycle and thing are the basic wellsprings of advancement discusses. This was a to some degree summarized see on discusses which was progressed by who set down ten basic wellsprings of inquiries: the heads, culture, exchanges, plan, money related perspectives, offering pressure, law, absurd longings, arrangements and workmanship

The basic period of analyzing claims which are more presented to intercession is to game plan of cases, to light up this subject earlier examination from is used. Concurring the referred to examination claims are essentially masterminded into 4 classes which are cost related, time related, quality related and

extraordinary. The blueprint of request of cases is used in the paper further ahead.

All the above examinations show that a huge wellspring of cases and questions is the arrangement record. in their assessment perceived three guideline components of an improvement banter specifically understanding courses of action, setting off capacity and hardship. They considered it the "question triangle" model. As shown by them, these three trimmings must be accessible all together for an inquiry or assurance to develop.

**Research Methodology**

In this study there are three stages of data collection, first to collect real life claims and disputes in arbitration from arbitrators for study, for the homogeneity of the obtained data all the sources were verified through government data. Second is to collect the cause of the claims as why do they occur and who is responsible for their occurrence and Third is to collect the problems after these claims are caused. The research instrument consisted of a questionnaire that is distributed among respondents consisting of practitioners involved in the project such as the owner, contractor and consultant. To maintain confidentiality each response has been assigned with a case number and a log sheet was made consisting of details of the claim and dispute. Each case data obtained was analyzed to find any genuineness and repetitiveness to check if there was any correlation of the claim with the type of construction project or conditions of the contract. The criteria for respondents used are practitioners with a minimum of 5 years' experience in large-scale projects and minimum S1 education. The collected data was then analyzed and suggestions are made from the conclusion

**Result And Analysis**

The first step was to obtain the major occurring claims in construction projects and the obtained data showed that there are mainly seven types if claims namely Delay claims, Price acceleration claims, change of work order claim, Different site condition claims, Damage claims, Loss of profit claims, Wrongful withholding of deposit claims [13]. These claims are sub categorized more for better understanding and providing

better suggestions to incorporate with. There are mainly four categories of these claims that is Time related, Cost related, Quality related and Miscellaneous. The below table shows the classification of the claims.

Time Related (A)	A1: Money given by contractor as he delayed in work
	A2: Work delayed as details were not provided on time
	A3: Client wants to end the work
Cost effective (B)	B1: Current bill payment
	B2: Refund related
	B3: Increase in rates of materials used
	B4: Change in scope of work
	B5: High risk involving jobs
	B6: Cutting off penalties
	B7: More items added
Quality Related (Q)	C1: Not similar perspective view of BOQ
	C2: specification and work are not aligned to each other
Miscellaneous(M)	D1: Contractor was careless in carrying out operations
	D2: Client was careless in carrying out operations
	D3: arbitration cost
	D4: Interest incurred on the payment which is given late

[14] Each subcategory is detailed below:

1. A1: Related to payment for delay of work by contractor; these are decided according to the Clause 2 (GCC) of CPWD which takes care of payment for late completion of work by the contractor in completion of total work or some portion of the work which was promised as per the contract for which client had to incur losses which can be an operational loss due to late start of work or liquidated damage loss etc.
2. A2: When delay in work occurs due to inefficiency of the client in providing necessary details (mainly design), required materials or land for constructions which is mentioned in the contract and due to which contractor had to suffer loss in paying extra to the staff, leased machineries or equipment for the delayed time, etc.
3. A3: These cases are relating to suspension of work before booked time. They go under Clause 3 expressing when agreement can be resolved and Clause 14 which says doing Part Work at Risk and Cost of Contractor of CPWD General Conditions of Contracts and emerge because of

- dropping of agreement by the customer before finish on different grounds, named unlawful by temporary worker.
4. B1: These cases are relating to installment of Running Account (RA) charges and are administered by Clause 7 which says installment on Intermediate endorsement to be viewed as advances and Clause 9 which states installment of Final Bill of General Conditions of Contract. Cases coming up because of postponed installment, non-installment or part installment of running record bills to the contractual worker and even those tending to the recuperation of discount deducted from the bills notwithstanding certain condition not being satisfied by the customer are totally remembered for this class.
  5. B2: These are claims identified with installments other than Running Account (RA) charges and are secured by Clause 10B which says made sure about development on durable materials and Clause 45 which states arrival of security store after Labor leeway of CPWD GCC. These additionally incorporate cases relating to recuperation of advances, discounts, recuperations against security store, charges for use of administrations of customer, and so on
  6. B3: Claims tending to the non-installment or part installment to the temporary worker or recuperation of excessive charge by the customer on the guise of accelerations in rates as tended to in the Clause 10C which permits managing installment because of expansion in cycle or wages because of legal requests and 10CC which manages installment because of increment or lessening in costs or wages after receipt of delicate for works of the CPWD are remembered for this classification. These cases emerge because of acceleration in costs of different materials past a predefined period as referenced in contract that add to an expansion in the paces of various things of agreement.
  7. B4: In this category of claim when there is a change in scope or timeline of work for example if the owner decides to change the design or the purpose of the project which is being carried out or will be about to carried out is changed then these claims take place and they comes under clause 12 which says that Deviation or Variation Extent and pricing of GCC
  8. B7: These cases relate to extra things or work which goes under Clause 12 of GCC. Cases which emerge because of contrasts in feeling about the paces of new things or paces of the things with changed particulars just as cost of works in debate, which were not initially a piece of the understanding between the two gatherings and were executed by the temporary worker according to customer's or Project Manager's directions. However, an affirmation of through the best possible channel is needed prior to acquiring these costs by the contractual worker else they can oppose by the customer.
  9. C1: Claims because of contrast in understanding of Bill of Quantity. This class incorporates claims for emerging installments because of contrast in understanding or supposition about a thing of work, which might be ascribed to questionable thing definition or thing not characterized by any means.
  10. C2: These cases are identified with work not adjusting to determinations, drawings, orders, and so on and are managed by Clause 11 which states work to be executed as per details, drawings, orders, and so forth, Clause 16 which states activity on the off chance that work not done according to particulars and Clause 24 of CPWD GCC. In such cases, the temporary worker requests for installments kept down by the customer or Project Manager in light of the fact that the work is viewed as unsatisfactory, which according to the temporary worker, is an unfair allegation.
  - D1: Nominal harm/misfortune caused because of contractual worker's carelessness/deficiency. Cases requesting recuperation of costs or misfortunes brought about by the customer by any carelessness or flaw by the temporary worker not canvassed in any of the classifications examined above fall in this classification.
  11. D2: Nominal harm or misfortune acquired because of proprietor's carelessness or flaw.

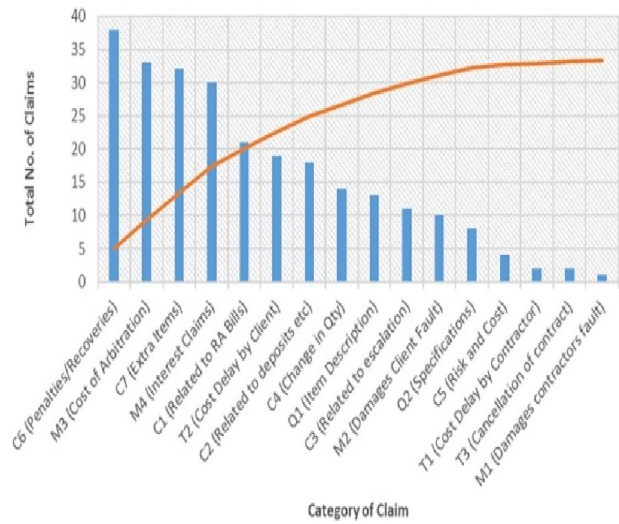


Cases requesting recuperation of costs or misfortunes brought about by the contractual worker's firm because of any explanation other than those referenced in past classifications will be established in this class.

- 12. D3: Cost of intervention procedures. Cases falling in this classification are on the record of costs acquired in directing assertion procedures and incorporate charges to the mediators, cost on movement (whenever looked for), costs in convenience for spot of discretion or some other such cost related with orchestrating intervention procedures.
- 13. D4: Claims relating to interests due on postponed installments. The interests guaranteed by both of the gatherings because of postponement in installments on account, asserted or forthcoming to be paid will likewise be related with this class.

From the pmi.org and the data collected two charts are prepared showing the maximum number of claims that has been raised in the construction projects which has been presented in figure 1. These claims are fitted in the above categories and then a chart is prepared for all the claims that are raised and it shows us a percentage of claims that are raised versus the type of the claim

It is inferred clearly that claims for the amount of penal recoveries for materials used by contractor tops the list of claims made which is under C6 of above category and cost of arbitration with the cost of extra items are the claims combinedly seconds the list and the reason is obvious as mostly most of the projects are completed by this time thus the owner does not find a reason to pay extra and these claims are more likely to turned into disputes and for solving the dispute the arbitration cost is an extra cost which if contract is made and adhered properly is not required to be paid in a contract. Then other claims are mostly miscellaneous but interest for the amount which is not given in time is very important as when the amount is big the interest also matters in the overall cost.



[15]

Reasons For Claims	Mean Score	Rank
Changes in owner's requirement	4.7	1
Changes in design post tender is awarded	4.38	2
Planning stage is not given required time due to some constraints	4.29	3
Lack of clarity in the owner's requirement	4.05	4
Changes arises during the execution stage	3.68	5
Employer's or contractor's administration failure	3.36	6
Sudden swing in economic or market conditions	2.94	7
Negative effects of political factors	2.05	8

[16] From the data collected a mean score is provided for each reason for a claim out of 5 and hence each reason is ranked accordingly. A detailed reason from the study is listed below for the above reasons.

1. Changes in owner's requirement is the most listed reason for a claim to rise, this happens because the scope of the project is not decided in the beginning and it keeps on changing which leads to difference in the opinion and new requirements although these requirements are small in terms of cost but collectively they amount for a major cost for the contractor and sometimes an already done construction has to be demolished to meet the requirements leading to added cost and loss in time of construction period thus collectively all these changes leads to more 5% to 10% increase in the cost of construction.
2. Change in design post tender is awarded is the second most common reason for a

- claim to rise now once the contract is awarded the design is made and setup is done accordingly, a small change in design requires to redo all the work again which increases the administration cost if change is done in the planning stage but if changes in design are demanded in the execution stage then it leads to delay in work and added cost of administration and labor charges plus there are many machineries which are leased by the contractor and their leased time has to be increased and their idle time increases with same operational cost.
3. Planning stage is not given required time which leads to improper planning and thus execution stage is not able to go on smoothly, which again leads to increase in construction time, administration cost and operational cost thus overall cost of project increases and improper planning will also lead to idle time of work machineries.
  4. Lack of clarity in owner's requirement is again an example of hasty work in planning stage or it can be said it happens in pre-planning stage because if owner is not clear with the idea then he will not be able to make a contract meeting his or her requirement and all the problems which leads to rise in claims is because of a default contract which does not provide a clear scope of project.
  5. Changing arising in execution stage causes the maximum increase in the cost of project however these changes are not entertained very much because general condition of contracts includes that after the contract is awarded, changes that cost more than 10% of the total cost of project can be denied by the contractor but when it comes to real world situation a contractor cannot say no to an owner unless the change is very big and these changes mostly occur through verbal communication thus leads to a difference in perception at the end of the project.
  6. Employer's or contractor's administration failure was the most common reason for the disputes as it mainly occurs at the end of the project or in the beginning of the project. Thus, resolving these types of claims is never a priority from one party and thus they lead to disputes. These claims generally include issues from awarding of contract stage to the handing over of the site by the contractor hence there is always a big list of claims confiding in this category and resolving these claims takes time.
  7. Although there is always a clause in contract regarding the sudden swing in the market regarding the cost of material or services but still these conditions award more money than predicted and is always reason for a claim as it is pre decided upon the rates but deciding the change in future market price is always a big task as it is decided by considering a lot of factors hence chances of error are always quantified.
  8. Negative effects of political factors always take participate in a project construction period but this generally occurs in big projects leading to socio economic effect and thus this concerns most of the organization in the area and more the government organizations are involved more problems arise in granting the permission and continuing the work.
- Another finding from the study and the data collected the problems in process of the claims and it figures out to be mainly five types of problems that occurs first, Problems in claim identification. Second, Problems in claim notifications. Third, Problems in claim examination. Fourth, Problems in claim documentation. And fifth is problems in claim resolution. The major reasons for these problems are discussed below.

#### *A. Identification:*

According to contractors the major problems in identification of claims are

- (i) Lack of awareness of site staff to notice a claim, Insufficient contract knowledge by site staff and
- (ii) Insufficient skilled personnel for detecting a claim. All three problems relate to staff's skills and awareness. Staff are expected to understand contract provisions and obliged to read and assess them before the start the project. But most of the times contract is not shared with everyone and also a delay in

sharing contract leads to different assumptions from different working staffs.

#### *B. Notification*

Notification of a claim is a vital task as it has to be done in stipulated time and in proper format through the formal channels as mentioned in the contract conditions. Thus, it becomes a rather difficult task and the major problems that occurs during the process are

- (i) Inaccessibility of the documents required for submitting the claim notification.
- (ii) Poor communication among the officials for submitting the claims and negligence in entertaining the claim notification and
- (iii) Insufficient time to prepare the documents for sending the notification as there is already high work load of the ongoing construction. The document for notification should be able to provide detailed documents and submitted in writing. Thus, a good communication is required among the channels for this process to go on smoothly.

#### *C. Examination*

The next is examination process which requires good communication to acquire the desired details and is mainly hampered by ambiguous procedure for examining a claim and the unavailability of record to which are needed to analyze the claim. Although a stipulated time is given for examining the claim but due to high work load and above limitations it always gets extended and leads to a dispute.

#### *D. Documentations*

The document comprising of the claim detail ought to be free from loop holes and should contain all the required information and discussion paperwork regarding the subject of the claim but ineffective record keeping and inaccurate recorded data leads to a delay in verifying the document.

#### *E. Resolution*

Negotiation is the first step to achieve resolution for a claim. Compromises area part of claim which are to be done on either case so before a claim turns into a dispute a discussion providing acceptable compromise from both sides can resolve a claim before it hampers the project and leads to accelerated cost.

### **DISCUSSION**

It can be easily inferred from the analysis that claims are bound to rise in construction project.

Improvement in contract can lead to minimize the number of claims and loss in time and cost due to claims but there are many factors which cannot be predicted like future fall or rise in the price of goods and services and the political factor, also a well-defined scope for the project can minimize the problems in planning stage and proper communication among the channels and hierarchical channels can lead to less time loss and better resolution of claims. For this to happen CPWD has to revise its general conditions of contracts more frequently and all the stakeholders should pay attention to the contract before it is awarded and should adhere to its specification as the major reason for claims to rise are for the things which are not mentioned in the contract furthermore the claim process needs improvement and cost for arbitration which leads in number of claims should be decided beforehand only. All these claims are related to each other because if time of construction increases then cost of construction will also increase which will lead to low profit in the project. These claims take a toll on administration cost and operational cost of a project and in construction industry there are already many unpredictable factors which are not very easy to avoid so there is a strong need to avoid or minimize the other claims which can be dealt with a better inclusion of clauses and conditions in a contract.

### **Conclusions And Recommendations**

The analysis of the claims and their causes evidently shows the major claims that occur and what are the reasons for their occurrence with their adverse effects on the construction project. Now the main focus of this research paper is to how these claims can be avoided and how disputes can be averted. Broadly below recommendations are required to be followed for the same:

1. The contract should be able to define the responsibilities and rights of all the stakeholders in a project.
2. Planning stage is very crucial to avoid claims thus, ample amount of time should be given to planning stage and each detail should be conveyed to all the stakeholders through the proper channels.
3. Record keeping can avert the claims so rather than oral verification of change on

order task a proper direction should be given from owner or project manager to the contractor which can be referred to in future if difference in perception arises.

4. 4. Acceptance of change in order should be demanded from the contractor in due time before commencement of work.
5. 5. Clear instruction for contractor should be provided in hiring skilled labor.
6. 6. Quality check and conditions should be provided nationwide by the government authorities to avoid post construction claims.
7. Discussion is the key to resolve a claim even before it arises thus, the contractor and owner should be able to discuss every major decision throughout the construction time of the project.
8. Delay in the completion of project can be averted by using proper techniques and software and maintained timely.
9. Records for goods, services used and progress should be kept and maintained timely in order to avoid any discrepancy.

Detailed recommendations for some of the above-mentioned claims in Table 1. Are as follows:

#### For category B1

This category consists of claims related to payment running account and final bills. These claims are the most successful claims after arbitration which leads to increase cost so these types of claims are the most likely to be avoided at most because these are the most genuine claims and occurs due to improper execution of term of contract. To avoid these claims, one should:

1. For a project involving large sum of money the contractor depends on the running account bills for the future deposits thus keeping that money will cause a delay in work and start a vicious cycle of claims one leading to another. Thus, these payments ought to be done with in the stipulated time decided in the contract.
2. To motivate clients for completing these payments interest should be levied on the withhold sum according to the market condition, this will not only be appreciated by

the appreciated by the contractor but also reassure him.

3. In most contracts following the GCC there is no mention of recourse if the Engineer in charge does not complete the measurement verification in time. Putting a clause for the same will ensure timely work for the construction.

#### For B2

This classification manages claims relating to installment of recuperation of advances, for example, activation advance, plant and apparatus advance, made sure about advances and even interest on propels. Issues identified with security store also are clubbed in here. It must be remembered that if the quantum of guarantee esteem is diminished, debate goal may not be needed at all in light of the fact that for lower guarantee esteem, neither of the gatherings may wish to press for it on the grounds that the money saving advantage investigation probably won't allow it. Accordingly, to initially assault and address issues identified with these fruitful cases would be an ideal activity. Following are the suggestions:

1. Interests and recuperation of advances are frequently inclined to questions. On the off chance that an interest free development can be given to the temporary worker in reasonable portions guaranteeing that the past portion is fittingly used in the connected chips away at site, the cases can be decreased.
2. It has been seen that various cases are made by temporary worker on the appearance of arrival of security stores. The agreement conditions ought to expressly express all such conditions under which just the security store can be held by the EIC

#### For B3

This class of cases is identified with heightening of rates during contract execution. This issue has been decently managed inside the overall states of agreement of CPWD under Clause 10 and 10CC and the principle issue is by all accounts the authoritative techniques. In

any case, following methodologies are suggested:

1. Most issues in the cases considered relate to acceleration on works executed after augmentation of time span was given by the customer. Accordingly, the agreement conditions must be appropriately changed to accommodate such inevitabilities and join arrangements that evade questions.
2. Another issue is tolerating the installments by contractual worker with no remark or tolerating bill by customer with no remark. It has been seen that judges have considered this acknowledgment as verifiable acknowledgment of the terms on the off chance that a bill is acknowledged with no remark or data to temporary worker if there should arise an occurrence of rates being heightened by him. Likewise, receipt of installment by contractual worker on diminished rates and without an opportune correspondence on record to show the contradiction has been maintained as inferred understanding. Subsequently, regulatory methods of both the gatherings are likewise liable for such cases. Thus, such cases can be diminished by essentially following hearty cycles of documentation and correspondence by both the gatherings.

For B6

This class joins guarantees that ascent because of expected recuperation of materials and different settlements or cutoff points from fleeting worker's bill. Since number of cases in this is the most brought furthermore up considering the way that the rate entire yielded is fairly high and in addition on the grounds that basically like different classes, the cases create and are took into consideration the fleeting worker because of nonappearance of fitting assertions to help division's challenge, it is crucial that endeavors are made to diminish these cases farthest degree conceivable. Following are suggested approaches:

1. Contractor should utilize the material given to him by the division in a sensible way. Either customer or any administrator from

customer ought to instruct the lawfully restricting worker for any troublesome utilization of item or gear saw by him through appropriate channels.

2. Contractor while enduring the material given to him by the division will practice exhaustive checks concerning whole, conformance to nuances and different cutoff points as for the material for any deviations reliant on what is concurred by the course of action. The brief master ought to in like way refer to customer with respect to any anomaly of utilization of associations through recorded genuine channels.
3. Also, the understanding conditions must be express while depicting the technique and rates for picking any judgments that are to be made considering over use or underutilization of gave material. To stay away from the issue absolutely, issue of material may in like way be finished generally speaking following to completing money saving piece of room evaluation which must consider the expense of such requests moreover.

For B7

The cases under this plan relate to cases of additional work or things, replacements or deviations, and so forth create thinking about various impression of the developments of new things or developments of the things with changed decisions, which were not from the outset a touch of the appreciation between the two social events and were executed by the transient master as demonstrated by customer's or PM's standards. The achievement rate for these cases isn't particularly high. In any case, it is fundamental that these are looked out for supportive so they never grow up.

1. The issue at the center dependably is obviously the strategy for showing up at the market developments of a specific thing. Despite the way that palatable changes have as of late been made to Clause 12 of GCC, it is sensible that a gradually system for figuring the reevaluated rates is given as

a bit of the specification so short lived worker knows the structure for showing up at the market rates early.

2. Change in totals can in addition be passed on inconsequential by presenting rate contracts without indicating entireties. In such courses of action, only developments of things are given and totals are not alluded to and momentary pros quote rates on rate premise on when in doubt rates. Essentially gross extent of rigid work is alluded to and the terms and states of the comprehension exhibit that anything can or can't be executed at site subordinate upon the site conditions. This way all the things in Delhi Schedule of Rates/Delhi Analysis of Rates (DSR/DAR) can be related with any game plan and just those things can be executed which are needed for that specific comprehension.

For D3 and D4

These plans are identified with claims that ascent due to the parties depending upon mediation for example the cases for intercession costs achieved by the get-togethers and the recuperation of loss of interest by the social affairs on totals guaranteed because of deferral in partition as the parties went to watchfulness for target of conversations.

As a routine schedule, the intervention costs are borne likewise by both the get-togethers, this could be settled upon by the parties in the watchfulness strategy itself to avoid

inconsequential movement and exertion in settling claims relating to these.

As respects the interests, the watchfulness strategy may in like way join developments of interests as ordinarily concurred and as customarily yielded by the authorities in past cases.

### Limitations

Construction projects are bound to have claims is the biggest limitation. There are certain unpredictable factors which will always lead to rise in claim like the fluctuation in economic market for the price of goods and services and it follows a perpetual cycle of claims and arbitration which leads to delay on project completion and overrun in cost of project. Projects with high cost of production are subjected to more risk and the guidelines from CPWD or the general conditions of contracts are not revised regularly which leads to more exposure for projects. With the current scenario where least amount of time is spent in planning stage more and more claims arise. The odd difference in the number of clients and contractors also put the contractors at the risk of losing a project and thus their conditions are not mentioned in the contract clearly which gives rise to difference in the perception of stakeholders. Slow arbitration process and negligence of discussion to resolve a claim is major factor for cost overrun in any project. Some of these limitations can be overwhelmed through proper planning and guidelines from government authorities and this will help the industry to rise further.

### References

1. Gaur, Maneesha, Sushma Goel, and Neelima Asthana. "Reconnaissance Construction Safety Hazards for Zero Accidents: A Review Study of Literature."
2. Margetts, F. (2018). What project management can bring to policy.
3. Varavenko, V. E. (2016). The work of the International Federation of Consulting Engineers (FIDIC) on development of the standard contracts as a mechanism of convergence of the international legal systems. *Mezhdunarodnoe pravo i mezhdunarodnye organizacii/International Law and International Organizations*, (2), 231-237.
4. P. (. Guptan, "Building India : Accelerating Infrastructure Projects," Mckinsey and company, Mumbai.
5. Surawongsin, P. (2002). The implementation of construction claims management in the Thai construction industry. *MEng diss. Asian Institute of Technology*.
6. S. Y. Cheung, "Are construction disputes

- inevitable?," IEEE transactions on Engineering Management.
7. Diekmann, J. E., Girard, M. J., & Abdul-Hadi, N. (1994). *DPI--disputes Potential Index: A Study Into the Predictability of Contract Disputes*. The Institute.
  8. G. J. Avinash, "Financial impediments to road infrastructure Development in India," 2019.
  9. H. R.B., "Managing Construction Conflict.," Longman Scientific Tech., Harlow,UK, 1987.
  10. Kumaraswamy, M. M. (1997). Common categories and causes of construction claims. *Construction Law Journal*.
  11. Mitkus, S., & Mitkus, T. (2014). Causes of conflicts in a construction industry: A communicational approach. *Procedia-Social and Behavioral Sciences*, 110, 777-786.
  12. Fenn, P., & Gameson, R. (Eds.). (1992). *Construction conflict management and resolution*. Taylor & Francis.
  13. Assaf, S. A., & Al-Hejji, S. (2006). Causes of delay in large construction projects. *International journal of project management*, 24(4), 349-357.

## IMPORTANCE OF DIGITAL MARKETING FOR START-UPS IN THE COMPETITIVE MARKETS

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### ABSTRACT

*Rising usage of mobile and social media as a source of information among the newer generation is an important factor of consideration among upcoming brands with little to no funds. The aim here is to investigate the connection between use of Digital Marketing to the success of brands online with intake of data online and through LinkedIn to prepare a case for Digital Marketing for start - ups in the competitive market. Using Survey questionnaire filled by 80 respondents, the study analyzed the success of digital marketing in Indian brands and measured these results against a traditional marketing approach. 4 groups namely Content Marketing, Branding, Integrated Marketing Communications and Interpersonal Communication were considered most important for the success of Digital Marketing for Start- Ups. The study definitively proves the point that Digital Marketing is an effective tool for those with little to no finance. Further studies can help establish stronger causal relationships as Online Marketing has seen a boost in times of corona.*

**Keywords:** digital marketing, start-ups, promotion, effectiveness, customer reach, social network.

### Introduction

India is a huge country with around 1.37 billion people (Statisticstimes.com 2019) and of that, 40% of the population uses the Internet every day (Statista.com). The launch of Reliance Jio in 2016 greatly aided to the advent of free and unlimited internet access in India. Thanks to Jio and other telecom operators like Airtel, Idea offering competitive plans, a lot more of India now can surf the internet with ease.

In today's world, new businesses get launched every day. And even though the market policies are fairly open and welcoming, what they have to watch for is the consumer behaviour. You compete not only with the businesses in your industry but also with the hundreds of millions of online and offline campaigns that are thrown at the masses every day. In order to be successful, you don't only need an amazing product, but a well-planned marketing strategy to advertise it.

Post the advent of easy access to the net, the use of Digital Marketing in marketing campaigns has drastically changed the way brands get perceived in the last few years. When done in congruence with the integrated marketing communication and technology, internet marketing has the ability to drastically increase the market share, provided the business has the resources and the vision to execute such a campaign.

Advertising is a tool used by many to encourage and influence the customers to begin and continue the action of buying their products. Essentially, you'd want to create the need for your product. In traditional marketing, advertising was done through the medium of pamphlets and TVCs. Today, consumers have evolved; they've moved on from being verbalizers to visualizers. Meaning, they want to see more and read less. What you throw out there needs to be crisp for them to retain it. A massive contributor in the success of efforts towards promotion is online marketing, or digital marketing as we call it. The value of two firms doing the same business in all ways similar, can vary drastically depending on the type of strategy each firm uses and the amount of consideration they give to integrated marketing communication.

The weight therefore falls on the shoulders of the marketing team to ensure that they have on board a group of skilled professionals who are able to organize and manage seamless processes across technology. Most start - ups today are bootstrapped and crunched for funds and time. It becomes quintessential therefore to ensure to use their limited marketing budgets in the most cost-effective method out there to get their message heard.

Being an entrepreneur or owning a start - up comes at the colossal task of managing to launch yourself with the limited resources at



your disposal. Here comes in Digital Marketing.

According to CAM Foundation - "Digital Marketing is a broad discipline, bringing together all forms of marketing that operates through electronic devices – online, on mobile, on-screen. Over the years, digital marketing has developed enormously, and it continues to do so."

### Conceptual Framework

People usually don't believe that understanding how you reach the customer is very important for being a great entrepreneur. But the reality in all of it is that the social acceptance by the consumers plays a vital role in determining how much or less valuable your start - up can be.

#### Laws of Supply & Demand

The fundamental characteristics of economics are Supply and Demand and consequently the Supply Curve and the Demand Curve. Demand is what and how much the buyer needs, and supply is what and how much the seller can supply. For a start - up, think of the Angel Investor or funding as the "buyer" who is looking to give you cash against the purchase of "equity" in your firm.

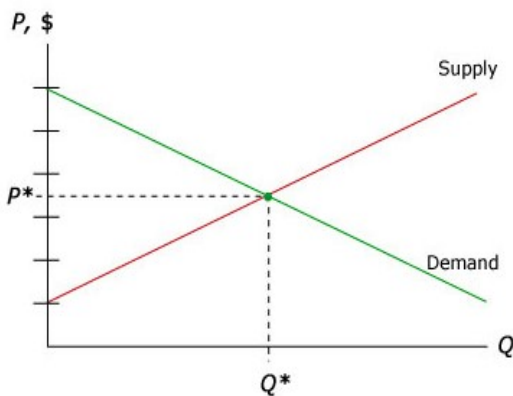


Fig. 1. Law of Supply and Demand

The principle dictates that in the event of a market-clearing price for any product or service, the target buyers and sellers will come together and a price will be set for the product or service. The demand for some products doesn't vary in extreme in response to the change in its pricing. Those goods like alcohol, drugs, necessity items, are called inelastic good. On the contrary, if the demand for a product were to fluctuate dramatically in responses to a change in its pricing, those goods are called "elastic" goods.

Usually markets operate in an equilibrium of demand and supply. Which is great for setting the price and deciding how much to produce. But often, the occurrence of an "exogenous event" can cause the demand and supply for a product or a category to shift. If we talk about the scenario of start - ups, if there is an influx of new businesses that enter the markets for a short period of success, that can cause a "demand curve shift" as outlined in the diagram below. The idea for them to enter is not have a lot of venture capitalists backed capital, but rather to bank on the off chance that their idea will take off like the Uber and the Facebooks of today.

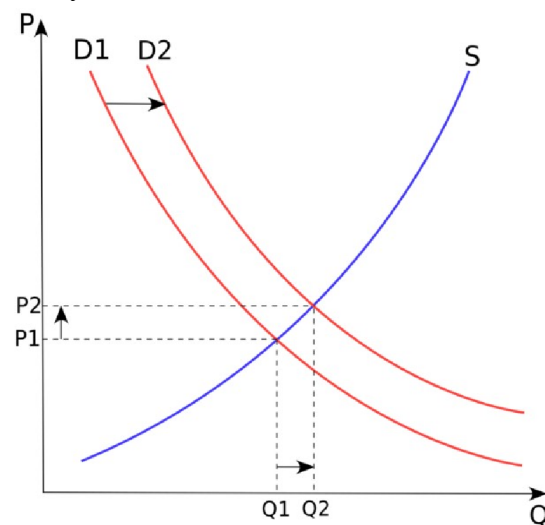


Fig. 2. Demand Curve

The problem in that kind of a plan is that instead of focussing all talents on one great masterpiece of a project that has market potential, the resources instead are distributed into a bunch of multiple companies (most of which will not amount to much).

### Present Study And Its Significance

Online Marketing is a term that collectively defines all the marketing efforts directed towards the general public through the channels of digital media. It is spread across the Internet but also expands to mobile phones, laptops/PCs, display advertisements or any sort of digital medium that can be used.

As we discussed in the conceptual framework, Marketing has come a long in terms of the way in which businesses today encash the advantages of digital marketing and technology in general to reach a wider audience with the best cost alternative. Especially for a star-up or

a new business with little finance to spare on advertising activities, digital marketing is becoming more and more lucrative because of its cost effectiveness and the fact that the spread of information is much faster through online mediums due to the easy and widespread availability of digital devices to the local public. Brands have started to realize the prevalence of Digital Marketing for a while now and an increase in advertisements on social media websites like Facebook, Instagram and YouTube especially has been massive.

### **Literature Review**

Roles of customers are changing every day. From a mere receiver of products to a commander of price and quality today, it's impossible to ignore their importance today (Pralhad and Ramaswamy, 2004). Khan and Mahapatra (2009) had observed that the boon of technology has and will play a vital role in facilitating the transaction of services from businesses to customers. According to Hoge (1993), electronic marketing is when the transaction between a business and a customer is facilitated the use of an electronic medium or method.

The origins of E-Marketing date back to the nineteenth century when the use of telegraphs began. While it started from the invention and positive response from the general public of the telephone, radio, tele, in today's times, electronic media is a force to be reckoned with. A lot of major brands, including but not limited to McDonalds takes advantage of the online mediums to advertise and reinforce their brand image in order to strengthen their relationships with the customers. Today they have a Happy Mean website, targeted towards the children, that has fun and interactive games to engage the younger audience that they have for themselves (Rowley 2004). Reinartz and Kumar (2003) have said that the profits that a company enjoys today is positively related to the amount of mailing efforts that they put in. Of the many advantages of Online or Digital Marketing, one striking benefit is that often while the audience catered to widens, the amount of cost incurred generally reduces. As compared to door to door sales or sales via the channels of distribution, the cost of selling products and services through online platforms is much lower. In addition to

that, the reach of social media goes beyond the geographical constraints of a face to face sales conversion. To places with bad or negligible infrastructure, products and information about the products can still be spread via these online platforms. So, to conclude, generally businesses find it cheaper to reach a wider audience via the social mediums as against the traditional methods of sales (Watson et al. 2002; Sheth & Sharma 2005).

Although there exists similar sounding terms that somewhat overlap, in the end, digital marketing, online marketing, internet marketing, e-marketing and electronic marketing are all clubbed under the same bubble that refers to the "method of advertising products and services online through the use of digital ads, websites, email marketing, mobile phones, televisions and interactive kiosks etc" (Chaffey & Smith, 2008).

Online advertising can be done in multiple ways, as we discussed previously in the study by Chaffey & Smith, 2008, but how can one rate the success and failure of those platforms and tactics? The Audience Growth Survey, came close to rating their efficiency.

They found that while the success rate of any medium is a factor unique to each business depending on the execution, it is majorly dependent on the aims and objectives and Key Performance Indicators (KPIs) set by the business, the reach of their campaign and the quality of their target group. And while it is important to have a wider audience, start - ups have generally been found to prioritise the quality of the new acquired conversions via mobile channels, email marketing and social media platforms etc, over the quantity of new conversions.

**There's No Silver Bullet**

As much science as there is in Marketing, there is no one-size-fits-all strategy in online marketing that can be fruitful for the success of each business that chooses to use it. Using cross-channel methods can increase your chances of success and conversion but it would not dramatically encash the same fruits it gave to another business. The ROI on your efforts, the size and quality of your conversions will vary depending on multiple factors such as the kind of product or service that you are selling, the online medium that you choose where the

said audience can be reached, how receptive is your audience, how unique is your offering, and if the audience can afford to spend on your product or service. With every new strategy, message and KPI changed, the marketing manager must ask themselves:

Which strategy will be best suited and does it resonate with the objectives of the business?

Let's say, email marketing is the medium at play here. Even though it is the oldest of the channels that we have discussed in our paper, yet marketers today leave no stone unturned in taking advantage of the varied ways that exists today to widen your date base.

And while going over the learnings in The Audience Growth Survey, businesses today, and especially start - ups, can use the same to A/B test their way to success. The trial-and-error method can help filter through all the methods which may have been previously discarded by another brand as unhelpful.

By the end of the paper, entrepreneurs will have a knowledge of multiple strategies and ways that can be used to create and maintain your online presence and also, ways to convert said audience into customers and ultimately, brand evangelists. However, none of the tactics that you will find here will work of all brands. While one may work wonders for brand X, the same may not make a dent for brand Y. The silver bullet doesn't exist. Through trial and error, you can however find a unique way suited for your brand that can be your wow moment.

Following are few studies and insights related to social media platforms done by acclaimed researchers from Universities across the world:

Dr. Lillian Clark has been collecting data on Facebook with the Suggested Posts/Sponsored Ads. Many people, now more vigilant after the MyPersonality app fiasco which had shared the access to personal data of close to 4million Facebook users, had registered the application in their minds in relation to the issue. It's also common knowledge among consumers that almost all institutions save their information and they've come to accept that. The trouble arises is when businesses get questioned as to how they plan to use this data and for what purpose, and how does the consumer benefit from their plans. Another takeaway from Dr. Lilian's work was that she predicted the

conclusion of sponsored posts before it actually happened.

Dr Torgeir Aleti Watne from Victoria University, Melbourne, extracted some remarkable learnings from his study on communication done by the Australian "Craft Brewers" with their customers on Twitter. His key finding was that the brands which invest time in coming up with creative texts for their tweets are the brands that have a mass following as people love the lexical diversity that they get to encounter day after day. So, start - ups can focus on their content plan and avoid recycling the same words that are being used in the Industry.

Dr Julia Wolny from the University of Southampton was researching on Webrooming and Showrooming. Most people know of showrooming, but webrooming is a relatively lesser known concept. It's the reverse of showrooming and in this case the customer searches online and buys from the store. Both show rooming and web rooming are major challenges for retailers. In the area of mapping customer journeys, Dr. Julia is attempting to formulate a system that can segment and identify the three types of purchase journey of a customer:

**Impulsive Journeys:** This kind of buying happens at the time of contact with the product. The key element at play here is the attractiveness of the packaging. If the product is returnable, it adds to the conversion rate.

**Balanced Journeys:** This kind of buying is relatively longer than the Impulsive journey. The customer is generally triggered to make a purchase post a stimulus; it could be after reading a review, watching an advertisement, or even simply a picture on social media. Once the product is registered, the prospective customer generally asks around to friends and relatives to seek their validation about the quality and features. They may also resort to relying on web searches to read blogs and watch videos to get a better picture.

**Considered Journeys:** Here, the pre-purchase journey is the most vital. Prospective customers are continuously taking in information. They read blogs, watch videos often but don't buy immediately. This is also one of the key learning that came out from Dr. Julia's research that while these prospective customers are in

this pre-purchase stage, they generally don't associate themselves as to be shopping, instead as someone taking in information.

### Research Methodology

#### A. Problem

Success in the binding factor between all start-ups and stable businesses. In the end, in order to succeed, what any business really needs is to create waves with their offering in the market. Without a distinct value, no business can succeed. According to Paul Graham, "...if you get growth, everything else tends to fall in place."

For a start-up to make an impact, it needs to work triple the hours and

- a) Offer value that a major audience wants, and
- b) Deliver and satisfy all the Target Groups.

However, unfortunately for most start-ups, the journey isn't as feasible due to multiple reasons and hence the actions aren't as feasible.

#### B. Research Objectives

1. To identify the usefulness of digital marketing for start-ups in the competitive market.

2. To study the impact of digital marketing on consumers purchase.

#### C. Research Type

I've done a Quantitative Research which was descriptive in nature. Surveys were administered (to 100 people) to investigate the consumer thoughts on Digital Marketing, alone, and in favour of Start-ups and small businesses with little finance to spare. The study was conducted online through LinkedIn groups and circulation of Google forms via snowball effect. Since the population of interest was Digital Marketing Executives with at least 1 year of experience, LinkedIn was chosen because its regulation policies meet high standards and authenticity of users. Therefore, it was assumed that all participants have knowledge of Digital Marketing. I received 82 responses, 2 of which had some information missing and thus reducing the significance of some questions. Those 2 were removed and report was made on the basis of 80 responses. Additionally, secondary data was incorporated in the form of articles, journals, company creatives, or any other historical data.

A survey questionnaire of 19 questions was circulated and filled by 80 respondents via LinkedIn and WhatsApp Groups. The questionnaire was designed keeping in mind the objectives and each question was related to one or the other objectives of the research. Multiple steps led to selecting the sample group for this survey.

The first two phases were around deciding the population, the targets, clients, employees etc. for the questionnaire, and to also postulate the frame of the group, i.e., to choose a sample that represents the population selected earlier.

In my case, I focused on employees who had experience working in Digital Marketing for a minimum of one year. The purpose is to outline the response of these employees on the importance of digital marketing for start-ups. The goal (for sampling) was also to choose employees from multiple organizations and at various levels of command and to notice the differences in people's opinions and behaviors. Therefore, the sampling method used here is "Convenience Sampling" which is non-probabilistic. And from there on, we banked on the snowball effect for further responses.

The size of my sample is small (80), enabling to have a similar pattern of answers and to come to conclusions. I have made sure to get all the possible respondents for the survey.

The sample size chosen is from organizations across India as it will give a clearer picture of how important is digital marketing and what impact can its market reach have on a relatively new brand and specifically, on start-ups.

### Results and Analysis

TABLE I. Demographics

Qn. No.	Title	Percentage
1.	<b>Gender</b>	
	Male	65%
	Female	35%
2.	<b>Job Title</b>	
	Social Media Director	18%
	Media Planner	14%
	Digital Marketing Executive	36%
	CEO	10%
	Content Manager	22%
3.	<b>Industry</b>	
	Telecommunications	2%
	Healthcare and Social Assistance	10%
	Digital Marketing Agency	34%
	Media and PR	12%
	Software and IT	42%

<b>4.</b>	<b>Size of Organization (employees)</b>	
	11-50 employees	12%
	51-100 employees	20%
	101-500 employees	68%
<b>5.</b>	<b>Nature of Organization</b>	
	B2B	70%
	B2C	30%

From the results, it can be seen that among the respondents, most of them were male. Though the sample was not large, it showed glimpse of executives' perception towards Digital Marketing and Advertising. Most of the responses I received were from multiple titles ranging from, but not limited to, Digital Marketing Executives (36%), Social Media Directors (22%) and Content Managers (18%), among others. We can understand that a large part of the sample was working in the Software and IT industry, followed by another huge bunch from Digital Marketing Agencies (34%) and rest from Healthcare, IT and Media & PR. Majority of the respondents were from businesses with 100-500 employees (68%) and the rest had 51-100 employees (20%), and 11-50 employees (12%) And lastly, of the 80 respondents, 70% of them worked in organizations associated with B2B operations and the remaining 30% with B2C organizations.

TABLE II. General Perspective

Sr. No.	Title	Percentage
<b>6.</b>	<b>%age of Revenue towards Marketing</b>	
	11-15	40%
	16-25	10%
	26-50	30
<b>7.</b>	<b>%age of Marketing spends towards DM</b>	
	11-25	40
	26-40	20
	41-60	10
	61-80	0
	81-100	10

A majority of 50% of the respondents believe that 11-15% of the revenues earned during the year should be allotted towards Marketing budget. This is higher than the usual 5% that is generally considered the industry practice and a positive sign. Further, collectively a majority of 50% again also believe that of the reserves allotted towards Marketing, 11-15% must be allocated towards the purpose of Digital

Marketing. It's a good step towards the growth of Digital Marketing as it signifies that executives are able to see results via efforts made online and are willing to invest more in this direction.

**Discussion and Analysis**

The tool used for data analysis was Factor analysis, which is a method of data reduction. The way the analysis works is that, in the responses gathered, the software will look for underlying variables that otherwise go unobserved in the observed variables. For the purpose of my research, I have used the Principal Axis Factor method. Below is the resultant Rotated Component Matrix, a varimax rotation was performed on the data.

Rotated Component Matrix <sup>a</sup>									
	Component								
	1	2	3	4	5	6	7	8	9
pr_media16	.962								
better_seo14								.642	
Question 17			.739						
brand_image8			.555						
Question 15	.802								
sales_to_website17				.663					
woropress13	.768								
promoting_content17				.539					
social_media16	.695								
sales_conversion8				.789					
understand_audience17	.714								
seo_sem15					.674				
two_wa_comm8		.729							
reports_agency_13				.658					
digital_ads15		.632							
Question 16	.674								
paid_analytics13					.699				
content_mktg15	.593								
generating_leads17		.732							
Question 8		.935							
online_presence8			.530			.505			
email_mktg15				.787					
lead_generation14			.544					.520	
affiliate_mktg15				.715					
inc_website_traffic8	.647								
crm13	.758								
inc_website_traffic8	.647								
crm13	.758								
blogs15		.669							
paid_advtg16		.756							
wider_aud8			.716						
Question 14		.621					.616		
inc_bsns14			.733						
website_traffic14								.655	
Question 13						.745			
free_tools13			.688						
content_creation17	.763								
loyalty8		.759							
Question 18			.849						
inc_awareness14	.764								

Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalization.  
 a. Rotation converged in 14 iterations.

**Fig. 3. Rotate Component Matrix post Factor Analysis in SPSS software**

\*The number after each variable reflects the question number that the variable is a part of. From the data, we received 9 factors whose Eigenvalue was at least 1, but only the Top 4 factors (of the 9) were selected for analysis as 33 of our 40 variables seemed to measure in these 4 underlying factors. All the variables in one factor relate to each other and after interpreting all components, I have managed to assign names to each group based on their most relevant descriptions:

- I) Content Marketing
- II) Integrated Marketing Communication
- III) Branding
- IV) Interpersonal Communication (customer retention)

A. Group 1

Here we have the following variables that have been clubbed together by the system on the basis on the similarity of responses they received from 80 respondents.

TABLE III. Content Marketing

Efficiency of Media & PR (.962)	Efficiency of Social Media (.695)	Efficiency of Organic Content (.674)	Challenge of understanding audience (.714)
Focus on Social Media (.802)	Achieving increased Brand Awareness (.764)	Efficiency of WordPress plugins (.788)	Challenge of Content creation (.753)
Focus on Content Marketing (.593)	Efficiency of CRM (.758)	Increasing traffic to Website (.647)	

The variables Media and PR (.962), Social Media (.802), WordPress Plugins (.788) have larger positive loadings on the 1st Factor, named Content Marketing. This factor defines and clubs the forms in which start - ups can spread their content to reach a wider audience, more efficiently and has been named accordingly.

B. Group 2

TABLE IV. IMC

Challenge of generating leads (.732)	Focus on Digital Ads (.632)	Setting up a two-way communication (.729)
Efficiency of paid advertising (.756)	Achieving increased business (.621)	Creating online presence (.935)
Focus on Blogs (.669)	Gaining Loyalty (.759)	

The next group with Online presence (.935), Gaining Loyalty (.759), Paid advertising (.756) clearly has larger positive loadings on the ways in which you can promote your brand to the audience and hence named Integrated Marketing Communications. IMC is a collection of ways in which brands can send one communication through multiple mediums of communication to maximise the reach and to maintain the authenticity of their words. Since this factor comprises variables that describe the multiple channels of marketing communication, thus Integrated marketing communications.

C. Group 3

TABLE V. BrandinG

Building Brand Image (.555)	Efficiency of free tools (.688)	Challenge of Building Website (.739)
Building an Online Presence (.530)	Achieving increased Business (.733)	Recommending Digital Marketing to Start - ups (.849)
Building a Wider Audience (.716)	Achieving Lead Generation (.544)	

Digital Marketing to Start - ups (.849), Building a Website (.739), Building a Wider Audience (.716) have larger positive loadings in Group 3, indicating the need and requirements for a synergized effort towards Branding, hence the name. This group collectively describes the way in which start - ups can create a positive brand image, some of them namely, website building, use of Digital marketing, building an online presence and lead generation among others.

## D. Group 4

TABLE VI. Interpersonal Communication

Sales Conversion (.789)	Efficiency of Agency reports (.658)	Focus on Email Marketing (.787)
Challenge of sales to website/profile (.663)	Challenge of promoting content (.539)	Focus on Affiliate Marketing (.715)

Sales Conversion (.789), Email Marketing (.787), Affiliate Marketing (.715) have large positive loadings on group 4, named Interpersonal Communication (for Customer Retention). Majority of the variables that were clubbed together in this factor describe methods by which start - ups can connect with their audience for better sales to website or profile. Insights from agency reports, Affiliate and E-mail Marketing, Promoting content online are all interpersonal methods of interacting with potential customers so as to instigate them to purchase, as well a way of reaching out to existing customers in order to retain them and possibly make subsequent purchases.

Together, all four factors explain 52.865 of the variation in data.

### Conclusion

In this paper we went over the essential elements for designing an online campaign for the growth of start - ups and relatively smaller brands. Many start - ups, businesses-in any field- generally fail without a plan. In the competitive markets we always applaud the efforts of successful entrepreneurs but rarely learn from the experiences of their failures and utilize it for tomorrow's success. We also came across incidents where many of the specialists, who had previously seen the ups and downs in the start - up culture usually end up discouraging others who have relatively newer concepts with words like "That won't work." (something said about Uber) or "That business cannot make profits" (something said about WhatsApp and Dropbox). But of course, some striving entrepreneur will manage to pull off the exact thing he was told he can't.

Trying new things and online marketing techniques or even the day to day activities in an innovative fashion is what fuels the success of the start - up industry today. From our survey and analysis, we arrived at the

conclusion that Digital Marketing, if used correctly, is a boon for start - ups. It has little cost associated to it and almost no investment, but if the efforts are utilized post research, the benefits are manifold. Another thing that popped up was that Digital Marketing is an easy way of interacting with the customers and has a higher perception. There will always be concerns like the safety and security of data, but with the advent of Digitization and Business Intelligence, these concerns can be minimized. Nevertheless, the results from both the primary and the secondary data confirm that Digital Marketing efforts can make huge waves for businesses that endorse on or via digital channels, and especially for start - ups. All four factors that emerged out of the analysis represent a domain of Digital Marketing that linked similar variables.

I) Content Marketing included variables like Organic content, WordPress, understanding the audience which point towards the direction of marketing your brand in the most efficient way.

II) Integrated Marketing Communication included factors like Digital Ads, Paid advertising, creating an online presence and the need to focus on blogs- all of which are different way in which you can communicate with your future customers.

III) Branding had factors like lead generation, wider audience, use of analytical tools and building your website – all to design the way that you want to position your brand and for whom.

IV) Interpersonal Communication (for customer retention) had factors like email marketing, affiliate marketing, sales conversions and promoting content which collectively sum up the interpersonal methods of communication that brands can use for the purpose of retaining their customers as well as converting prospective clients.

Effectiveness of these factors for the best performance is a must, therefore it is of utmost importance that a start - up be different for it to be effective. Online paid tools have been known to be easy to use and successful at correctly translating business insights for start - ups.

From the research, I would like to conclude that Digital Marketing however underrated,

forms the backbone of any organization wanting to break the geographical boundaries, in the absence of which the day to day marketing as well the efficiency would be greatly affected. The research paper was able to contribute towards understanding the current and best practices in the field of Digital Marketing for start – ups and small companies, thus giving an overview to the managers and top-level management on key aspects that need to be considered before launching a new campaign or communication.

### Recommendations

1. Start - ups must leverage multiple channels in synergy in order to reach the desired Target group. Awareness can be spread through proper content marketing and IMC formulation, considering the influence of the behaviour of the viewers.
2. It was discovered that unless customers have the required knowledge of the product, they will not purchase. Therefore, it is recommended that irrespective of the size, the firm must include Digital Marketing in their marketing efforts in ways of E-Mail Marketing and Social-media Marketing.
3. With benefits, Digital Marketing has limitations also, like fraudulent activities or privacy issues. So, companies should not consider Digital Marketing as the only option of communication.

### Limitations

Some likely issues within the formulation of the questions in the structure and questionnaire design may have hindered the respondent from being able to fully express their opinions on the multiple variables used to verify the Hypothesis. It may have also proven more resourceful to target only those executives who have additionally worked with start - ups and seen their rise and fall. So as to avoid any ‘guesswork’ included in the data which may or may not have offset my own results. impatience

Additionally, some participants got visibly impatient towards the end of the survey as it was quite in depth. A lot of top brand employees were not able to fill the form due to lack of time as the current mid Covid-19c scenario has rendered even the biggest giants to

be on their knees. The impatience may have further stemmed from the inability to provide the ‘correct’ answer from a start - up’s perspective as not all of the respondents had experience in the area. Additionally, aside from the perception digital marketing by the executives, there may be additional factors that influence the success and failure of a campaign, specifically the market. As evidenced by the current success rate, start - ups is not an expanding industry.

Thorough interviews could have benefitted the purpose of the survey to make it truly qualitative. It would have required more time per respondent to complete the questionnaire but those insights would have been more beneficial for analysis. An interview setting also allows for a semi - structured interview with more liberty to gauge the non-verbal signs, tone, and relate them to the reasonings behind the open- ended questions. All of this was lacking in the current format of interviews.

### Managerial Implications

As managers, it’s essential to keep oneself up to date on everything that’s happening in the marketing world and reviewing new trends and also keeping in touch with the changing target audience. The digital world is a continuously changing environment, and many marketers should now start spending more of their time on digital marketing efforts and open a role for Digital Marketing as a post Covid19 scenario so clearly requires digital skills in order to stay relevant for the brands as well as the managers. Read more on the new trends, models to gain a perspective on the usefulness of new mediums of communication and best use of technology for maximising success of campaigns and communication.

The results of our survey indicate that while all marketers have the goal of more conversions, the way you do it can make or break your marketing. Going digital is the way to succeed and all managers should at least not only work in tandem with the digital marketing team, but also try and A/B test their approaches once in a while. All responses are insights. Good or bad, the audience has told you their reaction. Every post, every photo must align with the goals of the organization. A lot of work goes behind designing a content and it’s easy to discard the



efforts if you haven't first hand experienced the work pressure. But all of this experimenting, whether with the customers or for self-study, will help you get a better understanding of the customer.

The coming generation relies on technology to get their daily information and entertainment. With the use of multiple tools, you can track how many times your brand was mentioned, with what emotions, in which city, for what purpose. Traditional marketing doesn't allow for this brand tracking and hence most brands are unaware of the communication that is happening around them. Most giants in the

industries are already leveraging Digital Marketing and other tools for a better understanding of their customer base in order to rightly design their campaigns. Since hiring most high skilled professionals requires massive spending, managers can choose to educate one self and rely on other talent inside the company itself. Additionally, with little cost attached to Digital Marketing, compared to hoarding or billboards, start - ups can easily focus their efforts towards hiring better, knowledgeable employees rather than investing a lot more in campaigns with half knowledge.

### References

1. Watne, T. A., & Hakala, H. (2013). Inventor, founder or developer? An enquiry into the passion that drives craft breweries in Victoria, Australia. *Journal of Marketing Development and Competitiveness*, 7(3), 54-67.
2. Chaffey, D., & Smith, P. R. (2013). *eMarketing eXcellence: Planning and optimizing your digital marketing*. Routledge.
3. Giese, J. L., & Cote, J. A. (2000). Defining consumer satisfaction. *Academy of marketing science review*, 1(1), 1-22.
4. Hoge, C. C. (1993). *Electronic Marketing Manual*. McGraw-Hill.
5. Khan, M. S., & Mahapatra, S. S. (2009). Service quality evaluation in internet banking: an empirical study in India. *International Journal of Indian Culture and Business Management*, 2(1), 30-46.
6. Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of interactive marketing*, 18(3), 5-14.
7. Reinartz, W. J., & Kumar, V. (2003). The impact of customer relationship characteristics on profitable lifetime duration. *Journal of marketing*, 67(1), 77-99.
8. Rowley, J. (2004). Online branding: the case of McDonald's. *British Food Journal*.
9. Sheth, J. N., & Sharma, A. (2005). International e-marketing: opportunities and issues. *International Marketing Review*.
10. Watson, R. T., Pitt, L. F., Berthon, P., & Zinkhan, G. M. (2002). U-commerce: expanding the universe of marketing. *Journal of the Academy of marketing science*, 30(4), 333-347.
11. Wolny, J., & Charoensuksai, N. (2014). Mapping customer journeys in multichannel decision-making. *Journal of Direct, Data and Digital Marketing Practice*, 15(4), 317-326.

**AIR INDIA: HIGH IN THE SKY TO LOW ON THE GROUND****Ankit Bansal**

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**ABSTRACT**

*Air India, a public sector corporation, operates passenger and freight flights and has a market share of 11.8 percent as of January 2020 [1]. Once considered as a 'Jewel in the crown' in the Indian aviation industry, it no longer holds the same credit as the service and earnings slipped after the merger of the domestic counterpart, Indian Airlines and global partner, Air India in 2007, owing to the management's inability to manage the mountain debt of ₹ 62,000 Crores (US\$ 8.75 billion), leaving the company stranded in the dust [2]. Around ₹ 22,000 crores (US\$ 3.1 billion) account for aircraft acquisition, and the balance is to cover its working capital [3]. The privatization of Air India was sanctioned by the Indian government in 2017 and decided to sell its controlling stake in the parent company and its allied group - Air India SATS (AISATS) and Air India Express, which was initially aimed to be finished by the end of 2018. However, no private institution showed any interest in owning partial ownership in the debt-laden airline. After failing to sell the airline, the government tried to lure the bidders by selling its 100-percent equity in Air-India, and Air India Express and 50 percent in AISATS. In January 2020, the government invited bidders by issuing Expression of Interests (EOI). To get more bidders, the government has also lowered almost ₹ 30,000 crores (US\$ 4.2 billion) of debts [4]. Nonetheless, the government's attempts to invert Air India's losses appeared to be stalled with the depletion of its share in industry, sustained losses, and an aggregation of debt. This study aims:*

1. To familiarize with the history and management of the company since its inception.
2. Know about the financial health of the company through fundamental study.
3. Identify the capital structure and its compatibility with the company's credit balances.
4. Identify 'warning flags' and an overview of possible financial vulnerability that could have been resolved by prompt intervention.
5. To understand the role of the government in the good and bad times of the business.

**Keywords**—Air-India, Mountain Debt, Disinvestment, EOI, Privatization

**Introduction**

Though Air India currently enjoys a distinctive status in the aviation sector worldwide, has an 11.8-percent share of the Indian airline market, which has been whittled down over time due to numerous factors [1]. Be that as it may, it had an inquisitive beginning. Airmail letters from Europe to India were unladed at Karachi from foreign shuttles in the early 1930s. The mail was then shipped by train to its intended destination — a process that could take several days. An erstwhile aviator of the Royal Air Force named Nevill Vintcent came up with an idea to set up an air service that would deliver the mails to its destination the same day. Vintcent took the concept to JRD Tata, the Tata family's 25-year-old scion, and an avionic freak. Finally, in 1932, JRD Tata and Nevill Vintcent commenced Tata Air Mail with two small Puss Moth aircraft capable of carrying a mail consignment and two passengers. The first flight of Tata Air Mail departed on October 15, 1932. JRD Tata piloted the plane from Karachi to Bombay, and then Vintcent took over from

Bombay to Madras, carrying the mail. Tata Air Mail reported a profit of ₹ 60,000 in its first year, delivering 10 tons of mail, and 155 passengers [5]. It extended its service to Delhi, Hyderabad, Goa, and Colombo in a few years, and in 1946, Tata took the company public and subsequently renamed it as Air India.

Due to persistent setbacks, the union government in 2000-01 considered disinvestment and re-privatization of Air India. It agreed to sell a partial stake in the loss-making national airlines. However, it could not be taken further following dissent from the opposition in the parliament.

The consolidated firm's losses surged by around ten times within two years after the merger of the two biggest airlines of the country - Air India and Indian Airlines, in 2007. Air India had amassed around ₹ 42,600 crores (US\$ 6.0 billion) as debt by March 2011 and was actively seeking government finances [6]. The government pumped in some funds to keep it financially sound. In 2013, when Ajit Singh, the then Aviation Minister, claimed that denationalization is the core resolution of the

airline's survival, the idea of privatizing the air carrier was again taken into consideration.

Keeping in mind the dwindling profitability and reputational damage of India's pre-eminent airline for nearly two decades, in 2017, the Indian government approved Air India's privatization. However, it got failed when no private business house showed any interest in buying a liability instead of an asset-based company. The plausible causes for the futile attempt were the government's refusal to discharge entire ownership of the organization, mismanaged and controversial decisions over the years, high amount of distressed debt, variations in the macro environment, individuals not allowed to bid, the performance track record of the bidder, and bidders unable to form a consortium within the given time.

After having failed attempt, the legislature decided to give away the airline in its entirety and started inviting bidders in 2020. To lessen the burden on the prospective buyers, the government has reduced debts and liabilities by moving them to a Special Purpose Vehicle (SPV) by almost ₹ 30,000 crores (US\$ 4.2 billion) and sell the airline with less than 40 percent of debt amount, which is due to the acquisition of aircraft [4].

Nevertheless, that too does not seem to suffice to lure bidders due to reasons like a slump in the global financial system that has been triggered by the impact of COVID-19 lockdown, other than the unsystematic risks related to the firm.

### Methodology

This study develops an analytical approach to understanding the financial health of a public sector enterprise and identifying the hurdles that obstruct it from being sustainable and ever going firm. It assesses historical financial and managerial activities while evaluating the mismanagement and prevailing condition of the firm. It considers the stated acts and accounting postulates to question the significant variations that emerge from the unaccepted level of capital structure. To evaluate the prospects of divestment, considering the continuous government funding and significant impact of this plan on the 'going-concern' stature of the firm and the overall aviation industry of India.

### Findings

Aims to analyze the past and future prospects of the firm based on the result, whether the committed step by the government of India will bring any positivity in the company's profits and fiscal balance of the Indian economy. The use of accounting principles will help in determining the consistency and sustainability of the company's management.

### Limitations / implications

This reading is confined to the scope of Air India, converges on the firm's financial inclusion and the industry's stability. This study does not take into account the other firms individually, but recognizes them as inclusive as part of the industry.

### Discussion

#### A. History

1932: Tata Sons, headed by the business tycoon JRD Tata, launched Tata Airlines- the first scheduled airline in the country.

1946: Tata Air transformed into a government-owned entity registered as - Air India Limited.

1948: Indian Government launched overseas operations under the separate brand - Air India International and acquired a substantial stake (49 percent) in Air-India.

1953: Enactment of the Air Corporation Act, provide for the nationalization of all existing airline assets.

1962: The first all-jet airline in the world, Air-India, was renamed after the term 'International' removed from its earlier name.

1985: One of Air India's 747s crashed into the sea with 329 passengers on board.

1994: The Air Corporation Act abolished to pave the way for private airlines; Under the Companies Act, 1956, both national carriers were turned into a government owned entities.

2000: Brought a privatization plan into consideration.

2004: Air India launched Air-India Express, a low-cost subsidiary.

2007: Indian Airlines and Air India were merged and registered as The National Aviation Company of India Limited (NACIL) [7].

2010: Consolidated entity NACIL renamed as Air-India Limited.

2012: The union government approved Air India privatization; turnaround plan to infuse over ₹ 30,000 crores approved until 2021 [8].

2018-20: An attempt to sell stake in the airline, attracted no bidders hitherto.

*B. Industry Analysis*

Over the last three years, one of the fastest-growing sectors of the Indian economy is the Indian aerospace industry. As per the International Air Transport Association (IATA) report, It has now become the world's third-biggest domestic market and is anticipated to take over the UK by becoming the third largest air passenger market by 2024.

In FY20, air passenger traffic stood at 341.05 million, where the domestic market has 80 percent, and foreign passengers have 20 percent of it, while local cargo traffic at 1.14 million tons with international segment stood at 1.70-million tons [1].

The Indian government has been focusing on expanding the number of air terminals to meet the increasing traffic demand. India has envisioned proliferating the number of airports from the current 103 running airports to around 190 - 200 newly developed by FY 2040 alongside increasing aircraft requirements. As of July 2018, a fleet size of nearly 620 aircraft was functional in India by scheduled airline operators, which is expected to rise by more than 75 percent to about 1,100 aircraft by FY 2027 [9]. Indian industry is essentially an oligopoly market consisting of five major players with IndiGo as its market leader.



Market Share: 11.8%

Passenger Load Traffic: 2.95M



Market Share: 47.9%

Passenger Load Traffic: 12.05M



Market Share: 16.0%

Passenger Load Traffic: 4.01M



Market Share: 6.6%

Passenger Load Traffic: 1.66M



Market Share: 9.9%

Passenger Load Traffic: 2.47M

*Milestones*

- According to the Department for Promotion of Industry and Internal Trade (DPIIT), Foreign investment in India's aerospace industry

reached US\$ 1.9 billion in the last two decades. The government has made amendments by enabling 100-percent Foreign Investment (FDI) through a direct route in the commercial air transport services industry. However, FDI more than 49 percent will need government approval. According to CRISIL, Investment to the tune of ₹ 42,000-45,000 crores (US\$ 5.9 - 6.4 billion) is anticipated in India's aviation infrastructure during FY2018 - 2023 [1].

In January 2020, IndiGo, being the first Indian airline, has achieved a fleet size of 250 aircraft and operates 1,500 flights a day.

India entered into an open sky agreement with the Australian government in June 2018, permitting airlines on both sides to provide numerous traveling opportunities to Indian and Australian cities.

Indian aircraft service providers for the Manufacture, Repair, and Overhaul (MRO) of aircraft are liberated from customs duties. MRO expenditure represents 12-15 percent of total revenue, the second-highest expenditure after the cost of fuel.

As of January 2019, India's government is planning on a road map to facilitate the production and financing of aircraft within the country.

As of October 2019, 55 Airports Authority of India (AAI) airports were declared as Single-Use Plastic Free Airports.

Under the Regional Connectivity Scheme (RCS), about 3.4 million passengers traveled, and 335 corridors were awarded in 2019, serving 33 airports, including ten water aerodromes [1].

Given India's burgeoning economy, The Indian aviation industry is anticipated to be largely unexploited with tremendous potential, provided that flights are still costly to around 40 percent of the country's population, which is the upwardly mobile middle class.

With the appropriate strategies and a persistent emphasis on quality, cost, and passengers' interest, India will be well-positioned to achieve its goal of attaining the third spot in the global aviation market. Indian travelers' spending is projected to rise by 2021 to ₹ 9.5 lacs crores (US\$ 136 billion), for which it requires 2,380 new commercial aircraft by

2038, owing to the growing demand in air travel [1].

### Air India - Timeline

Air India has not reported any earnings for more than a decade since its 2007 merger deal with the Indian Airlines. The principal reason for the disinvestment of Air India was its managerial inability to effectively deal with its borrowing of ₹ 62,000 crores accumulated over more than half of the century [2]. Ashwani Lohani, CMD of Air India, recently said the "mountain of debt" that the management acquired seems insurmountable and at the origin of all the concerns.

#### C. *Initial Days – 1950-1970*

Air India's nightmares began in 1952 when the situation of all the airlines was witnessing a general deterioration worldwide. In the 1950s, it started facing competition for its routes. Several new companies were being founded, entered in the industry due to the availability of cost-effective, war-surplus DC-3s aircraft. Around 11 airlines of 21 newly established were permitted to start operations in India. The market began to complicate within few years and headed for the debacle of the Indian aviation sector. The Planning Commission of India (now replaced by NITI Aayog) proposed the integration of all the scheduled airlines into one single integrated company to revive the country's airline industry.

Parliament passed the Air Corporations Act in March 1953, which was recorded in the statute book on May 28, 1953, with the president's assent. This act nationalized all airline services and institutionalization of carriers to facilitate the acquisition of existing firms and provided better stipulations for commercial air travel services in the country. It gave Indian Airlines monopoly power to operate on scheduled domestic services, which ruled out any other operator.

Simultaneously, Air India International has become the single Indian carrier to fly on overseas routes expecting flights to some of the neighboring countries that Indian Airlines were granted.

#### D. *Air India - 1970-1990*

From the 1970s onwards, Air-India again faced tough times due to various reasons and experienced a negative return between 1976 and

1985. The global economy's downturn had significantly impacted air travel around the continents, and India was no anomaly. Moreover, as a national carrier, the government kept open some unprofitable routes purely for reputation, which would have been closed by any typical commercial airline. For example, the flight to the United States caused huge losses and led to wastage of resources for several years, even though most of them were working at full capacity. The Canadian route was even less lucrative, running at around potentially 55 percent of capacity. A second variable in the carrier's business woes was to face several global airlines for non-native travelers, Air-India was bound to charge most of its fares on a discount basis. Furthermore, the airline was highly dependent on local civilians - "ethnic traffic," which wanted competitive fares.

Flights to the oil-producing countries were one of the most profitable corridors for Air-India. In the mid-1980s, flights between India and the Gulf countries made up around 40 percent of the carrier's traffic. However, even those routes were not to be propitious, as revenue declined in the Gulf States. Most of the flights to these countries have had to be halted due to the dispute between Kuwait and Iraq and the subsequent War in the Persian Gulf. However, even during the conflict, the airline did not stop working, evacuate more than 150,000 Indians from war-torn areas [10].

Another issue was the lack of tourism in India. In 1984, Communal strife and assassination of Indira Gandhi, the prime minister of India, kept the travel industry down. To ameliorate the terrorism that emerged as a severe concern at a universal level, the parliament placed substantial scrutiny checks on foreigners, giving them another excuse to avoid the Indian market. Another worst tragedy in the carrier's saga occurred in June 1985, when its 747s aircraft crashed into the sea while flying from Toronto to Bombay with 329 passengers aboard. According to the Canadian Safety Board Report, the probable cause of the collapse was an explosive device. Nevertheless, it had impacted Air-India's legacy severely.

Considering the economic loss amid adverse events, in the fiscal year 1987-88, Air-India faced a massive loss of US\$ 23 million [11]. The then Indian Prime Minister, Rajiv Gandhi,

appointed Rajan Jetley as chairperson of sinking national airline to stem such happenings. He assumed charge of an overmanned transporter, bogged down in sticky union negotiations, and struggled under challenging working conditions. Additionally, bureaucratic intrusions and high fuel taxes made the airline expensive to operate. Jetley started by addressing the concerns related to high taxes on gasoline fuel by persuading the government to curb them and encourage pilots to work for long hours. To further limit these costs, Air-India considered keeping its American revenue streams of US\$150 million per year as debt indemnity. The firm also intended to raise funds by giving away its affiliate, The Hotel Corporation of India, worth nearly US\$220 million, along with its old Boeing 747 - 200s aircraft, estimated at US\$ 60 million. Though, this was insufficient to fund US\$900 million on purchases of new aircraft [11]. He also focused on expanding revenue base by beginning to entice travelers of wealthy backgrounds to consider buying more valuable first-class seats. He even modified the airline's look from redesigning the aircraft's layout to the staff's uniforms and enhancing in-flight meals and services. His leadership led Air-India to turn the previous year's financial loss into a profit of about ₹ 66 crores (US\$ 41 million) in 1989-90, then topped with a gain of ₹ 72.5 crores (US\$ 42.7 million) in the following year [11]. In 1989, It shipped 66,000 metric tons of cargo, which helped it attained the 19th spot in scheduled international freight by the International Air Transport Association. Later, It was determined to continue its triumph of the decade.

#### E. *Air India - 1990-2007*

Notwithstanding, these surpluses did not sustain for long, and It lost around ₹ 550 crores (US\$171 million) over the three years from 1994-95 onward [11]. It then made hardly any profit, and thus built a name for ill service and bad performance. Even a scheduled collaboration deal between Indian Airlines and Air-India got suspended in Spring 1998. Gradually there was a decline in air passenger traffic from 35 percent a decade earlier to 28 percent in the early 1990s, and then to 20 percent in the late 1990s.

The privatization of Air India was first proposed in 2000 when the then union government agreed

to sell 60 percent of Air India, with a 26-percent stake in overseas firms and 51 percent of the former national carrier, Indian Airlines. However, Sharad Yadav, the then Minister for Civil Aviation, objected to the move.

#### F. *Air India - 2007-2017*

In 2007, following the merger of Air India and Indian Airlines, Air India Limited's combined losses increased from ₹ 770 crores (US\$ 110 million) in 2006-07 to ₹ 7,200 crores (US\$1 billion) by March 2009 [12]. Within a quarter, India's biggest lender, State Bank of India (SBI), was assigned to prepare a structural plan to recuperate the airline. For liquidity purposes, the carrier sold four Boeing and Airbus aircraft from its fleet for about ₹ 90 crores (US\$18.75 million). By 2011, Air-India had an operating loss of around ₹ 22,000 crores (US\$ 3.1 billion) and an obligatory debt burden of approximately ₹ 42,600 crores (US\$ 6.0 billion), for which it sought help from the government for an equal amount [6]. In March 2012, the government pumped in approximately ₹ 3,200 crores (US\$ 450 million) into Air India to keep it afloat [13]. After that, its earnings graph went down at an increasing rate and dumped the balances of the airline into a much deeper trough.

According to the report by the CAG of India, the purchase of new aircraft carriers and the untimely merger were the primary reason for the weak financial situation. It also stated that against the target of raising around ₹ 2000 crores during 2012 -16 through monetization of assets, the company managed to raise only ₹ 64.06 crores.

Following the deserted attempts to turn around Air-India's finances leading to its corroding market share, continuing losses, and a heap of claims, The government's think-tank, NITI Aayog, proposed explicit unloading of Air India in its report earlier 2017. Afterward, the Cabinet ministry on June 28, conditionally accepted to divest part stakes in Air India and its sister companies.

#### G. *Air India - 2018-2020*

The government released "Expression of Interest" in March 2018 to offer Air India's and Air India Express' 76-percent stake along with 50 percent in Air India SATS, a joint venture between Air-India and Singapore Airport Terminal Services (SATS). The EOI stated that the new buyer will take over the claim amount

of ₹ 33,392 crores (US\$ 4.7 billion), and the selling process will be completed by the end of 2018, but no potential buyer registered the bid for buying such a huge debt [14]. Initially, India's largest low-cost airline, IndiGo and the Tata group's Vistara, had appeared keen to acquire a stake in Air India. But later, the airlines refused to get on board due to unwillingness to bear the unsustainable liabilities and owned partial ownership in a state-owned carrier as there were probable chances of interference on strategic and daily operational matters by the government as an owner of retained 24-percent shareholding.

In July 2018, the government had sought approval from the parliament to pump in ₹ 980 crores (US\$135 million) into Air India. At the time, the finance ministry was sent a distress call saying the firm urgently needed ₹ 500 crores, failing which it would default on its loan payments [3]. Since 2012, the government has pumped in ₹ 27,195 crores out of ₹ 30,231 crores to be kept for Air India to hold it afloat until 2020-21 as part of the UPA government's turnaround plan for the airline [15]. Considering the potential reason for the failure of colossal debt takeover, the government recognized the idea of selling off Air India in tranches to minimize the burden of debt on prospective buyers. The government had finally approved the airline's disinvestment, hoping that players in the industry - Indigo, Tata's Vistara, or any private partnership, would help to get its former position in the global airline industry. Nonetheless, that does not seem to be fruitful even after modifying the divestment plan.

After a failed attempt in 2018, it could further drain taxpayers' money as the government tries to keep it airborne. Many unusual obstacles to the proposed sale have surfaced from discontented pilots to oil corporations threatening to block the fuel supply.

Amid the increasing strain of financial commitments on the large airline and thus on the government, it again attempted to get it through. The government has offered 100 percent in the current offer and tried to remove every hurdle in the process. The Expression of Interests (EOI) was again released in January 2020 to invite bidders by controlling government and decided to sell 100 percent of Air-India and its budget carrier Air-India

Express with 50 percent of AISATS's shares. It has also reduced the airline's debt obligations by ₹ 29,400 crores by transferring it into a Special Purpose Vehicle (SPV) and will further reduce the total debt over ₹ 9,300 crores and offer the airline with ₹ 23,286 crores debt, which is related to the procurement of aircraft [2].

Initially, the goal of the disinvestment was to get the best possible price for the airline, but eventually, it has shifted to continuous survival of airline and restructuring of the employee base of around 27,000, along with the least haircut on creditors' debt amount. The government needs to reconfigure its FDI policy to allow overseas investors to purchase a controlling stake in the Indian aerospace industry. On March 4, 2020, the Department for Promotion of Industry and Internal Trade (DPIIT) notified a cabinet decision enabling non-resident Indians (NRIs) to own up to 100 percent of the disinvestment-bound stake in Air India, previously limited to just 49 percent. The EOI also states that the 'Confirmed Selected Bidder' shall ensure that Air India and Air India Express Limited continue to provide air transport services on a going concern basis for at least three years from the conclusion day of the proposed transaction on terms as specified in the final documents.

However, there is no response received from any prospective buyer for reasons other than those attached to the firm itself. Globally, there is a financial slowdown that has been ignited by the COVID-19 lockdown, which has created not only liquidity slump, but also led to fear in mind for such a considerable investment.

### **Conclusion**

Many experts argue that comparing a public sector undertaking with private enterprise on the same parameters is irrational because PSUs are not always guided by their financial performance. Instead, they need to consider socio-economic factors as well. If required, government-owned entities can operate even if they are loss-making and can refinance themselves from the government budget. Nevertheless, there needs to put a saturation limit as government finances are the taxpayers' money. The 14th Finance Commission has elaborated that since the government's funds are sourced to taxpayers' money, which is limited, it is essential to consider the opportunity cost of

significant investments. Investment in necessary sectors needs to be taken into discussion. Considering the ongoing scenario globally, Healthcare, education, and social well-being along with infrastructural development are the sectors of priority, wherein the government investments should be more focused on building a sustainable and thriving economic base universally.

In a clinched profiling of Air India, it is incurring continuous losses for the last two decades, which is being financed by the government. Though the government has reduced the debt sum from ₹ 62,000 crores to ₹ 23,286 crores, it is still a hefty amount to be paid up for a private partner [2]. On top of this, it is likely to take at least 2-3 years for getting the carrier back to its profitability, during which it is estimated that the prospective investor would need to infuse significant additional funds to get the airline onboard, thereby making the start-up costs to be massive for any buyer. Acknowledging the two critical reasons offered by the governments behind disinvestment - to

provide fiscal support and to improve the efficiency of the enterprise. In the case of Air India, keeping the government's limited fiscal balance and survival of national airline, both parameters need to be factored in. However, it is estimated that even a well-executed selling of assets may not wholly encompass its current obligations. Thus, in the event of a sale, taxpayers may have to pay at least part of the loss - either directly if the government pays the creditors of the airline, or indirectly if the banks of the public sector write off their loans to the airline.

Nevertheless, The ultimate sale of the loss sustaining PSUs will be good for the Indian economy as it will clear idea to investors that reforms are taking place in India with time and it is not willing to waste any resource by making sick investments and gradually, will pave the way for other loss-making public companies like Bharat Sanchar Nigam Ltd (BSNL) and Mahanagar Telephone Nigam Ltd (MTNL).

### References

- Gummalla, P. Socio-Economic Implications Of Corona Virus Pandemic With Particular Reference To India. *Impact of Lockdown on Education, Economy & Environment in India, 1*, 274.
- M. Mishra, "Govt offers Air India with loan against aircraft of Rs 23,286 crore," 2020 January 2020. [Online]. Available: <https://economictimes.indiatimes.com/industry/transportation/airlines/-aviation/govt-offers-air-india-with-loan-against-aircraft-of-rs-23286-crore/articleshow/73654406.cms>.
- K. Ghosh, "Air India is back to drain the Indian taxpayers' wallets," 27 September 2018. [Online]. Available: <https://qz.com/india/1403962/after-failed-air-india-sale-government-lines-up-another-bailout/>.
- S. Sinha and S. Sinha, "Niti Aayog pushes for sale of Air India, Rs 30,000cr debt write-off," 31 May 2017. [Online]. Available: <https://timesofindia.indiatimes.com/business/india-business/niti-aayog-pushes-for-sale-of-air-india-30000cr-debt-write-off/articleshow/58920007.cms>.
- Alikhan, "Air India was once the company that inspired Singapore Airlines and Cathay Pacific," 04 July 2017. [Online]. Available: <https://qz.com/india/1021026/air-india-was-once-the-company-that-inspired-singapore-airlines-and-cathay-pacific/>.
- UK Essays, "Merger between Air India and Indian Airlines," 05 December 2017. [Online]. Available: <https://www.ukessays.com/essays/business/merger-between-air-india-and-indian-airlines-business-essay.php>.
- BBC, "Government approves plan to save Air India," 12 April 2012. [Online]. Available: <https://www.bbc.com/news/world-asia-india-17686507>.
- K. Shah, "India set to trigger revival of global aviation sector," 04 January 2020. [Online]. Available: <https://www.sundayguardianlive.com/business/india-set-trigger-revival-global-aviation-sector>.



9. THE WEEK, "Before 'Vande Bharat': In 1990, India conducted largest ever citizen evacuation in Kuwait," 06 May 2020. [Online]. Available: <https://www.theweek.in/news/india/2020/05/06/before-vande-bharat-when-india-conducted-largest-ever-citizen-evacuation-in-war-torn-kuwait.html>.
10. Reference for Business, "Air-India Limited - Company Profile, Information, Business Description, History, Background Information on Air-India Limited," [Online]. Available: <https://www.referenceforbusiness.com/history2/34/Air-India-Limited.html>.
11. MAGZTER, "Air India - Divestment," November 2019. [Online]. Available: <https://www.magzter.com/article/Business/SPs-Airbuz/Air-India-Divestment>.
12. The Times of India, "Govt clears Rs 30,000 crore Air India bailout," 13 April 2012. [Online]. Available: <https://timesofindia.indiatimes.com/business/india-business/Govt-clears-Rs-30000-crore-Air-India-bailout/articleshow/12642191.cms>.
13. S. Sarkar, "Air India Is Up For Sale Again. Here's What's Different This Time," 27 January 2020. [Online]. Available: <https://www.bloombergquint.com/business/air-india-is-up-for-sale-again-heres-whats-different-this-time>.
14. N. Anand, "The Indian government finally explains why it failed to sell Air India," 02 August 2018. [Online]. Available: <https://qz.com/india/1346583/air-india-sale-government-explains-why-it-failed/>.

**CORROSION INHIBITION EFFICIENCY OF Zn(II), Cd(II) AND Hg(II) COMPLEXES OF MANNICH BASES OF BARBITURIC ACID****H. Anandalakshmi<sup>1</sup>, M. Jude Jenita\* and V. Parvathi<sup>2</sup>**<sup>1</sup>Department of Chemistry, Faculty of Engineering and Technology, Annamalai University, Annamalai nagar, Chidambaram, Tamilnadu, India

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**ABSTRACT**

Mannich base of Barbituric acid namely 1-[morpholin – 4-yl (phenyl) methyl] Pyrimidine 2,4,6- trione (BAMB) and 1-[aniline(phenyl)methyl]pyrimidine-2,4,6-trione (BAAB) were synthesized. Zn(II), Cd(II) and Hg(II) complexes of the above compounds were prepared and characterized using IR. In addition to this the above complexes were characterized by using analytical techniques such as conductance measurement. A preliminary corrosion inhibition efficiency of BAMB and BAAB were studied by weight loss method. The above studies proved that the ligands and their metal complexes can be applied for environmental related fields and aims at the inhibition towards corrosion of mild steel in hydrochloric acid medium at different concentration.

**Keywords:** Corrosion, Inhibitors, Mannich base, Conductance.

**Introduction**

Corrosion is a major problem caused by mineral acids, particularly Hydrochloric acid which is frequently used in industry during cleaning, acid picking, acid de-scaling and oil well acidizing [1-3]. Due to the aggressiveness of acids, inhibitors are often used to reduce the rate of dissolution of metals. Organic compounds containing hetero atoms, polar functional groups and  $\pi$  electrons as active centers have been reported as effective corrosion inhibitors [4-13]. An inhibitor is a substance which is added in small quantity in the electrolyte to reduce the rate of corrosion. The inhibitors may be organic or inorganic. But they should be able to dissolve in the corroding medium. Moreover, they should be able to form a protective layer. Several scientists work in the field of inhibition performance of corrosion in mild steel at different acid medium. Enormous losses occur due to corrosion every year in all countries of the world. According to literature, the cost of replacement of materials and equipment lost through corrosion has been currently estimated to be nine billion dollars per year all over the world. In India, according to the rough estimate direct losses due to corrosion are estimated to be 250 crores per year. The money spent on its prevention is about 50-70 crores per year. Considering these factors, the

present study aims at the inhibition performance of Mannich bases towards the corrosion of mild steel in hydrochloric acid medium at different concentrations.

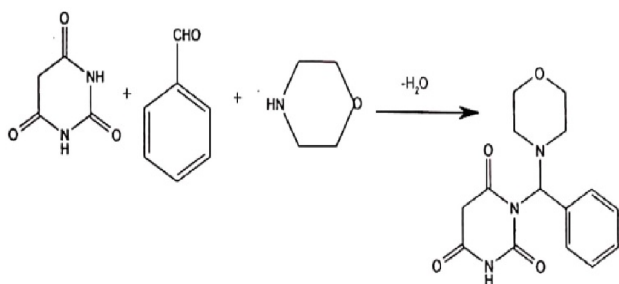
Generally Barbituric acids and its derivatives exhibit a wide range of biological activities such as antibacterial and anti-hypertensive agents [14]. In continuation of the work on the development of heterocyclic compounds as corrosion inhibitors in acidic environment[8], we synthesis, characterize and report the corrosion inhibiting effect of Zn(II), Cd(II) and Hg(II) complexes of BAMB and BAAB using weight loss measurements. The selection of these compounds as corrosion inhibitors is based on the fact that these compounds contain lone pair of electrons of N<sub>2</sub> and O<sub>2</sub> atoms through which they can co-ordinate readily on the metal surface. In addition they have low toxicity and are also used in pharmaceutical. The values of metal loss and inhibition efficiency of all the compounds were found to depend on their molecular structure.

**Synthesis and characterization of 1-[morpholin-4-yl(phenyl)methyl]pyrimidine-2,4,6-trione (BAMB) and 1-[aniline4-yl(phenyl)methyl]pyrimidine-2,4,6-trione (BAAB):**

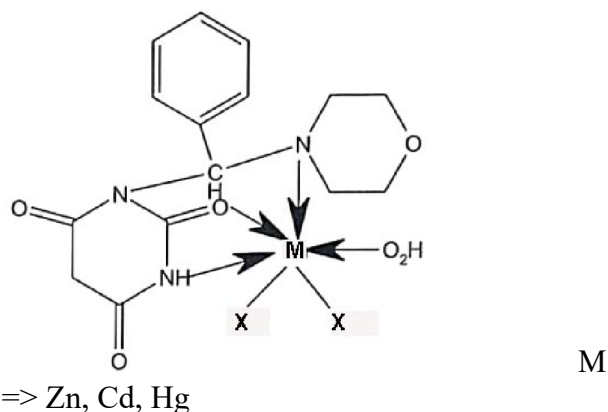
BAMB was synthesized by employing the Mannich synthetic route. The three reactants barbituric acid, morpholine and benzaldehyde

were taken in equimolar ratio. Barbituric acid (12.8g, 0.1mol) was dissolved in minimum amount of ethanol-water mixture. To this mixture morpholine (8.7ml, 0.1mol) was added and stirred well. Benzaldehyde (10.6 ml, 0.1mol) was added in drops to the above homogenous mixture and stirred well continuously for 30 minutes (**Fig-1(a)**). BAAB was synthesized in the same manner by taking barbituric acid, aniline (9.3 ml, 0.1mol) and benzaldehyde in 1:1:1 ratio. In both the cases a paste like semi-solid was observed. It was kept aside for about 10 days. A solid yellowish white powdery substance formed was washed with distilled water and filtered using the suction pump. The compound (**Fig-2(a)**) was dried at 60°C in an air oven and recrystallized from ethanol. The percentage yield of the compound BAMB was 85 and BAAB was 50. BAMB is a colorless solid and its melting point is 172-173°C. BAAB is also a colorless solid with the melting point 162-163°C. Both the compounds are insoluble in water, but partially soluble in ethanol, chloroform, carbon tetrachloride, and acetone and completely soluble in DMF and DMSO.

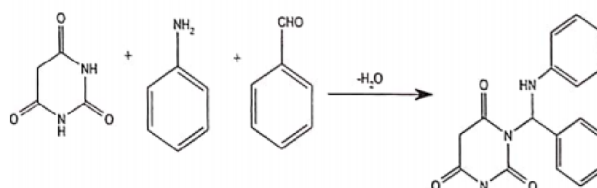
Complexes of  $Zn^{II}$ ,  $Cd^{II}$  and  $Hg^{II}$  of BAMB (**Fig-1(b)**) and BAAB (**Fig-2(b)**) were synthesized by dissolving the metal chlorides and nitrates in ethanol, metal sulphates in methanol and the ligand solution in ethanol-DMF mixture. The hot solution of the metal was added to the hot solution of the ligand (1:1 ratio) with constant stirring. The insoluble colorless complex formed was filtered, washed with ethanol and DMF to remove the unreacted metal and ligand, dried in air and then in an air oven at 80°C. All the complexes are stable in the solid state..



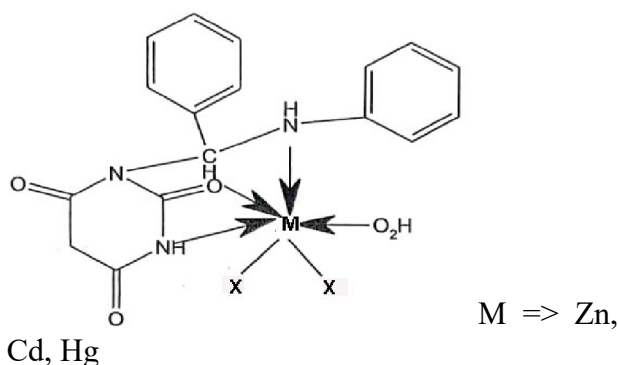
**Fig-1 (a): Synthetic scheme of BAMB**



**Fig-1 (b): Structure of BAMB complex**  
X => Cl<sub>2</sub>, SO<sub>4</sub>, (NO<sub>3</sub>)<sub>2</sub>



**Fig-2 (a): Synthetic scheme of BAAB**



**Fig-2(b): Structure of BAAB complex**  
X => Cl<sub>2</sub>, SO<sub>4</sub>, (NO<sub>3</sub>)<sub>2</sub>

## Characterization

### 1) IR

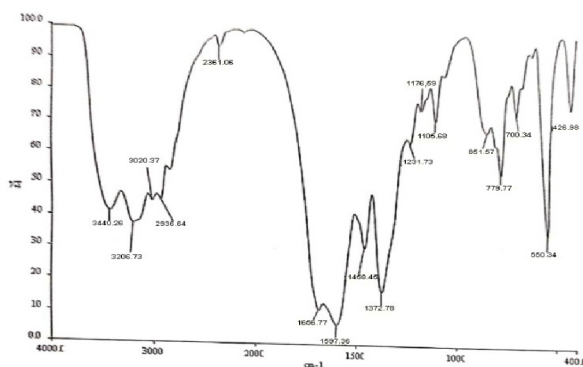
#### Zn<sup>II</sup> complexes of BAMB:

The IR frequencies are compared with that of the ligand. Upon complexation with  $Zn^{II}$  chloride,  $Zn^{II}$  Nitrate and  $Zn^{II}$  sulphate the ligand band due to  $\nu_{C=O}$  at 1682  $cm^{-1}$  experiences a positive shift, indicating the coordination of carbonyl oxygen to the metal atom. The complexes of  $Zn^{II}$  nitrate,  $Zn^{II}$  sulphate and  $Zn^{II}$  chloride (**Fig -3**) suffer a negative and positive shift for the  $\nu_{NH}$  band compared to that of the free ligand, it occurs as a broad band in the complexes since it overlaps with the  $\nu_{OH}$  of coordinated water in all the complexes of  $Zn^{II}$ .

The bands due to  $\nu_{C-N-C}$  for the free ligand at 1141  $cm^{-1}$  (amido) and 1107  $cm^{-1}$  are shifted to

higher and lower frequencies in all the complexes. This suggests that the carbonyl O and the amido N are coordinated to  $Zn^{II}$  in the chloro, nitrate and sulphato complexes. The structurally important absorption frequencies of  $Zn^{II}$  complexes have been presented in the **Table-1**.

$Zn^{II}$  sulphate complex shows bands due to 'SO' stretching mode,  $\nu_3$  of sulphate group at 1232, 1170 and 1070  $cm^{-1}$ . The 'OSO' bending mode,  $\nu_4$  appears at 666 and 617  $cm^{-1}$ . The  $\nu_1$  and  $\nu_2$  modes of coordinated sulphato group occur at 879 and 548  $cm^{-1}$ . These bands are consistent with those normally associated with the bidentate chelating sulphato group [14]. There are evidences for the presence of the coordinated water in the chloro, nitrate and sulphato complexes of  $Zn^{II}$ . These complexes show bands in the range from 3439-3443, 1655-1615, 883-851, 640-574, 536-466  $cm^{-1}$  which are assigned as  $\nu_{OH}$ ,  $\delta_{HOH}$ ,  $\rho_{rHOH}$ ,  $\rho_{wHOH}$   $\nu_{M-O}$  modes respectively of coordinated water.



**Fig – 3: IR spectrum of Zn(II) complex of BAMB**

### $Cd^{II}$ complexes of BAMB

The structurally important absorption frequencies of  $Cd^{II}$  complexes have been presented in the **Table-1**. The IR frequencies are compared with that of the ligand. Upon complexation with  $Cd^{II}$  nitrate and  $Cd^{II}$  sulphate the ligand band due to  $\nu_{C=O}$  at 1682  $cm^{-1}$  experiences negative shift 1 and 9  $cm^{-1}$  whereas  $Cd^{II}$  chloride experiences a positive shift of 2  $cm^{-1}$  respectively, indicating the coordination of carbonyl oxygen to the metal atom. The complexes  $Cd^{II}$  chloride,  $Cd^{II}$  nitrate,  $Cd^{II}$  sulphate suffer a negative shift for the  $\nu_{NH}$  band compared to that of the free ligand, it occurs as a broad band in the complexes since it overlaps with the  $\nu_{OH}$  of

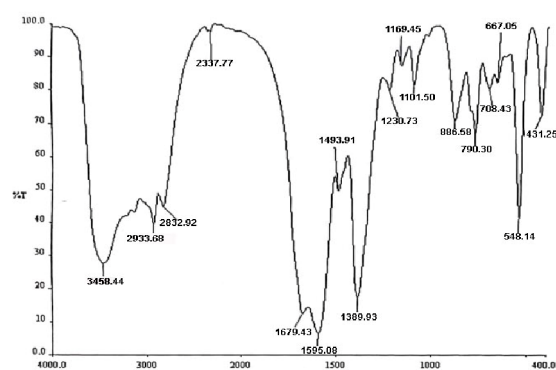
coordinated water in all the complexes of  $Cd^{II}$ . The bands due to  $\nu_{C-N-C}$  for the free ligand at 1141  $cm^{-1}$  (amido) and 1107  $cm^{-1}$  are shifted to higher and lower frequencies in all the complexes. This suggests that the carbonyl O and amido N are coordinated to  $Cd^{II}$  in the chloro, nitrate and sulphato complexes.

$Cd^{II}$  nitrate complex (**Fig -4**) exhibits  $\nu_5$ ,  $\nu_1$  and  $\nu_2$  for the nitrate group at 1493, 1389, 1070  $cm^{-1}$  respectively. The difference between the  $\nu_5$  and  $\nu_1$  is 104  $cm^{-1}$  suggesting unidentate coordination of the nitrate group. The 'OSO' bending,  $\nu_4$  in  $Cd^{II}$  sulphate appears at 699, 664  $cm^{-1}$ . The  $\nu_1$  and  $\nu_5$ ,  $\nu_2$  modes of coordinated sulphato group occur at 887 and 548  $cm^{-1}$ . These bands are consistent with those normally associated with the bidentate chelating sulphato group.

The  $Cd^{II}$  chloride complex exhibits IR absorption bands at 3441, 1607, 890, 661 and 547  $cm^{-1}$  which are assigned to  $\nu_{OH}$ ,  $\delta_{HOH}$ ,  $\rho_{rHOH}$ ,  $\rho_{wHOH}$  and  $\nu_{M-O}$  modes respectively of coordinated water. The band at 430  $cm^{-1}$  may be due to  $\nu_{M-N}$  vibrations.

### $Hg^{II}$ chloride of BAMB

The structurally important absorption frequencies of  $Hg^{II}$  complexes have been presented in the **Table-1**. The IR frequencies are compared with that of the ligand. Upon complexation with  $Hg^{II}$  chloride (**Fig – 5**) the ligand band due to  $\nu_{C=O}$  at 1682  $cm^{-1}$  experiences a negative shift of 19  $cm^{-1}$  indicating the coordination of carbonyl oxygen to the metal atom. The complex suffer a positive shift for the  $\nu_{NH}$  band compared to that of the free ligand and it occurs as a broad band with reduced intensity in the complex since it overlaps with the  $\nu_{OH}$  of lattice water.



**Fig – 4: IR Spectrum of Cd(II) BAMB complex**

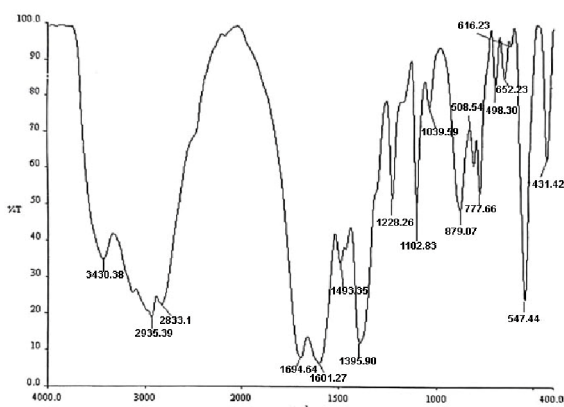


Fig – 5: IR Spectrum of Hg(II) BAMB complex

### Zn complexes of BAAB

The IR frequencies are compared with that of the ligand. Upon complexation with Zn<sup>II</sup> chloride, Zn<sup>II</sup> Nitrate and Zn<sup>II</sup> sulphate the ligand band due to  $\nu_{C=O}$  at  $1686\text{cm}^{-1}$  experiences a negative shift, indicating the coordination of carbonyl oxygen to the metal atom. The complexes of Zn<sup>II</sup> nitrate, Zn<sup>II</sup> sulphate and Zn<sup>II</sup> chloride (Fig – 6) suffer a positive shift for the  $\nu_{NH}$  band compared to that of the free ligand, it occurs as a broad band in the complexes since it overlaps with the  $\nu_{OH}$  of coordinated water in all the complexes of Zn<sup>II</sup>. The bands due to  $\nu_{C-N-C}$  for the free ligand at  $1121\text{cm}^{-1}$  (amido) and  $1107\text{cm}^{-1}$  are shifted to higher and lower frequencies in all the complexes. This suggests that the carbonyl O and the amido N are coordinated to Zn<sup>II</sup> in the chloro, nitrate and sulphato complexes. Zn<sup>II</sup> sulphate complex shows bands due to 'SO' stretching mode,  $\nu_3$  of sulphate group at 1241, 1108 and  $1070\text{cm}^{-1}$ . The 'OSO' bending mode,  $\nu_4$  appears at 701 and  $620\text{cm}^{-1}$ . The  $\nu_1$  and  $\nu_2$  modes of coordinated sulphato group occur at 769 and  $524\text{cm}^{-1}$ . These bands are consistent with those normally associated with the bidentate chelating sulphato group [14]. There are evidences for the presence of the coordinated water in the chloro, nitrate and sulphato complexes of Zn<sup>II</sup>.

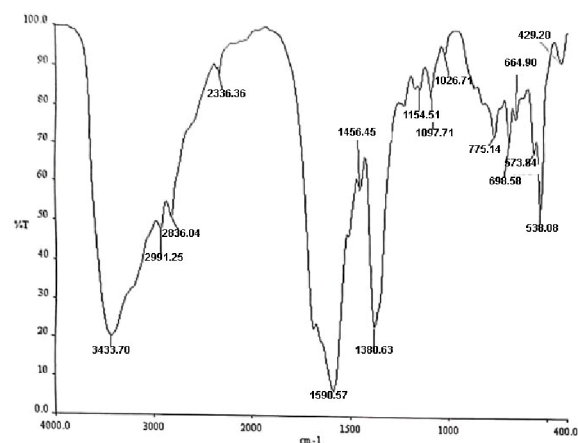
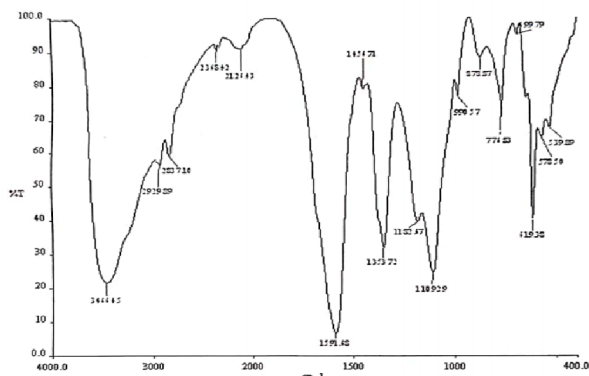


Fig – 6: IR Spectrum of Zn(II) BAAB complex

### Cd<sup>II</sup> complexes of BAAB

The structurally important absorption frequencies of Cd<sup>II</sup> complexes have been presented in the Table-1. The IR frequencies are compared with that of the ligand. Upon complexation with Cd<sup>II</sup> nitrate and Cd<sup>II</sup> sulphate the ligand band due to  $\nu_{C=O}$  at  $1686\text{cm}^{-1}$  experiences positive shift 8,2 and  $10\text{cm}^{-1}$  respectively, indicating the coordination of carbonyl oxygen to the metal atom. The complexes Cd<sup>II</sup> chloride, Cd<sup>II</sup> nitrate, Cd<sup>II</sup> sulphate suffer a positive shift for the  $\nu_{NH}$  band compared to that of the free ligand, it occurs as a broad band in the complexes since it overlaps with the  $\nu_{OH}$  of coordinated water in all the complexes of Cd<sup>II</sup>. The bands due to  $\nu_{C-N-C}$  for the free ligand at  $1121\text{cm}^{-1}$  (amido) and  $1029\text{cm}^{-1}$  are shifted to higher and lower frequencies in all the complexes. This suggests that the carbonyl O and amido N are coordinated to Cd<sup>II</sup> in the chloro, nitrate and sulphato complexes.

Cd<sup>II</sup> nitrate complex exhibits  $\nu_5$ ,  $\nu_1$  and  $\nu_2$  for the nitrate group at 1502, 1386,  $1098\text{cm}^{-1}$  respectively. The difference between the  $\nu_5$  and  $\nu_1$  is  $116\text{cm}^{-1}$  suggesting unidentate coordination of the nitrate group. The 'OSO' bending,  $\nu_4$  in Cd<sup>II</sup> sulphate (Fig-7) appears at 729,  $694\text{cm}^{-1}$ . The  $\nu_1$  and  $\nu_5$ ,  $\nu_2$  modes of coordinated sulphato group occur at 864 and  $534\text{cm}^{-1}$ . These bands are consistent with those normally associated with the bidentate chelating sulphato group.



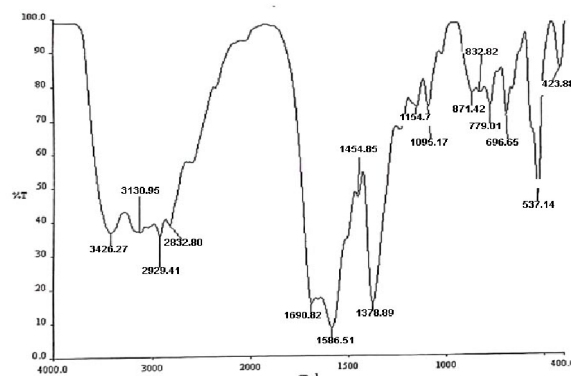
**Fig – 7: IR Spectrum of Cd(II) BAAB complex**

The Cd<sup>II</sup> chloride complex exhibits IR absorption bands at 3429, 1587, 864, 694 and 534 cm<sup>-1</sup> which are assigned to ν<sub>OH</sub>, δ<sub>HOH</sub>, ρ<sub>rHOH</sub>, ρ<sub>wHOH</sub> and ν<sub>M-O</sub> modes respectively of coordinated water. The band at 422 cm<sup>-1</sup> may be due to ν<sub>M-N</sub> vibrations.

**Hg<sup>II</sup> chloride of BAAB**

The structurally important absorption frequencies of Hg<sup>II</sup> complexes (**Fig – 8**) have been presented in the **Table-1**. The IR frequencies are compared with that of the ligand. Upon complexation with Hg<sup>II</sup> chloride the ligand band due to ν<sub>C=O</sub> at 1686 cm<sup>-1</sup> experiences a positive shift of 4 cm<sup>-1</sup> indicating the coordination of carbonyl oxygen

to the metal atom. The complex suffer a positive shift for the ν<sub>NH</sub> band compared to that of the free ligand and it occurs as a broad band with reduced intensity in the complex since it overlaps with the ν<sub>OH</sub> of lattice water.



**Fig – 8: IR Spectrum of Hg(II) BAAB complex**

**Bonding Atoms and Stereochemistry**

The ligands BAMB and BAAB have two potential coordinating sites, secondary amido N atom and carbonyl O atom. Comparison of IR spectra of the metal complexes with that of their free ligands suggests the coordination sites of the ligand, the mode of coordination of nitrate and sulphate groups to the metal centre.

**Table – 1: Important IR absorption bands (cm<sup>-1</sup>) of BAMB and BAAB metal complexes:**

Compound	ν <sub>NH</sub>	ν <sub>C=O</sub>	ν <sub>CNC</sub>	ν <sub>3</sub>	ν <sub>4</sub>	ν <sub>1</sub>	ν <sub>2</sub>	ν <sub>5</sub>
BAMB / BAAB	3137 / 3420	1682 / 1686	1107 / 1121					
ZnCl <sub>2</sub> BAMB / BAAB	3206 / 3433	1686 / 1590	1106 / 1154					
Zn(NO <sub>3</sub> ) <sub>2</sub> BAMB / BAAB	3135 / 3433	1682 / 1691	1103 / 1152					
Zn(SO <sub>4</sub> ) BAMB / BAAB	3132 / 3437	1682 / 1594	1108 / 1107	1232/1241,11 70/1108 & 1070	666 / 701 & 617 / 620	879/ 769	548/ 524	
CdCl <sub>2</sub> BAMB / BAAB	3135 / 3429	1684 / 1694	1149 / 1101					
Cd(NO <sub>3</sub> ) <sub>2</sub> BAMB / BAAB	2933 / 3444	1679 / 1688	1101 / 1155			1389/1 386	1070/1 098	1493/ 1502
Cd(SO <sub>4</sub> ) BAMB / BAAB	2933 / 3466	1663 / 1591	1100 / 1182		699/729 & 664/694	887/ 864	548/ 534	
HgCl <sub>2</sub> BAMB / BAAB	2935 / 3426	1694 / 1690	1102 / 1154					

**(2) Electrical Conductance Measurements**

The electrical conductance measurements of the ~10<sup>-3</sup>M DMF solutions at room temperature

were done in order to ascertain whether the anion is within or outside the co-ordination sphere of the complex.

**Table – 2: Conductance Data for Zn(II), Cd(II) and Hg(II) Complexes of BAMB / BAAB**

S.No	Complex	Decomposition temperature	Molar conductance $\text{Ohm}^{-1} \text{cm}^2 \text{mol}^{-1}$	Nature of the complex
1.	ZnCl <sub>2</sub> BAMB / BAAB	260°C / 260°C	0.000 / 0.001	Non-electrolyte
2.	Zn(NO <sub>3</sub> ) <sub>2</sub> BAMB / BAAB	240°C / 240°C	0.001 / 0.001	Non-electrolyte
3.	Zn(SO <sub>4</sub> ) BAMB / BAAB	250°C / 268°C	0.000 / 0.000	Non-electrolyte
4.	CdCl <sub>2</sub> BAMB / BAAB	260°C / 210°C	0.002 / 0.002	Non-electrolyte
5.	Cd(NO <sub>3</sub> ) <sub>2</sub> BAMB / BAAB	240°C / 170°C	0.001 / 0.001	Non-electrolyte
6.	Cd(SO <sub>4</sub> ) BAMB / BAAB	256°C / 258°C	0.000 / 0.001	Non-electrolyte
7.	HgCl <sub>2</sub> BAMB / BAAB	195°C / 192°C	0.003 / 0.001	Non-electrolyte

### Experimental Techniques

The practical oriented features include preparation of specimen, preparation of surface, making specimen for identification, duration of exposure and removal of corrosion product. Mild steel specimen is used in all experiments with pretreatments such as cleaning, polishing, and degreasing. Surface cleaning done by immersing the specimen in Clerk's solution (5g of SnCl<sub>2</sub> and 2g of Sb<sub>2</sub>O<sub>3</sub> in 100 mL HCl), polishing by using emery paper of various grade 0/0 to 0/5 and then finally degreasing by trichloroethylene or acetone. The specimen is stored in a desiccator. The initial weight of the specimen is noted using single pan balance and then immersed into the corrosive medium. The duration of the experiment is 30 minutes. After 30 minutes the weight of the specimen is noted. The loss of weight is calculated from the initial weight. From this the corrosion rate and the inhibitor efficiency are calculated. For the present investigation 500, 1000 and 1500 ppm concentrations of inhibitor solutions are prepared. Analytical reagent grade HCl and double distilled water were used for preparing test solutions of 5% and 10% HCl for all experiments. Corrosion rate and efficiency of the inhibitor are calculated using the formula

$$\text{Corrosion rate} = 87.6 \times (w_1 - w_2) / (\text{area} \times \text{time} \times \text{density})$$

Inhibitor efficiency =  $(W_0 - W) / W_0 \times 100$

Where,  $w_1$  = weight of specimen before treatment;  $w_2$  = weight of specimen after treatment

$W_0$  = weight loss without inhibitor;

$W$  = weight loss with inhibitor

The values of percentage inhibition efficiency (%IE) and corrosion rate (CR) of mild steel obtained by the weight loss method at 500, 1000 and 1500 ppm concentration of the two ligands in 5% and 10% HCl under room

temperature (Table -3) and for 60°C (Table -4) for 30 minutes are given.

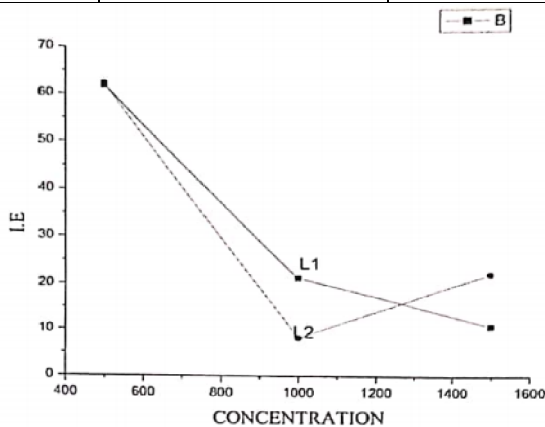
### Results and Discussion

#### Prevention and Control Of Corrosion

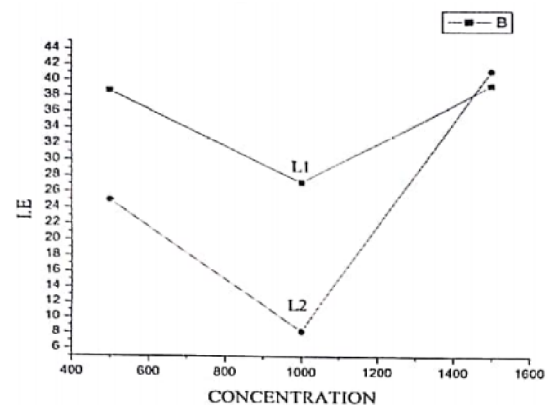
The methods generally adopted to prevent or control corrosion of metals are, suitable design and fabrication procedure, use of inhibitors, modification of the corrosive environment, use of protective coating (metallic and non-metallic), use of cathodic protection and alloying of metals. A survey of literature reveals that only a few inhibitors are available that can withstand higher acid concentration and temperature. The effective acidizing inhibitors, which are usually found in commercial formulations, are acetylene alcohols, alkenyl phenones, aromatic aldehydes, nitrogen containing heterocyclic and their quaternary salts, and condensation products of carbonyls. Among these acetylene alcohols are widely used because of their commercial viability. However, they suffer from the following drawbacks. They are effective only in high concentration and produce toxic vapours under acidizing process. In view of the above there exist a need for development of new acidizing corrosion inhibitors. These two mannich bases namely, 1-[morpholin - 4-yl (phenyl) methyl] Pyrimidine 2,4,6- trione (BAMB) and 1-[aniline(phenyl)methyl]pyrimidine-2,4,6-trione (BAAB) are used for studying their inhibiting properties on corrosion of mild steel in 5% and 10% HCl solution. The selection of these compounds as corrosion inhibitors is based on the fact these compounds contain lone pair of electrons on nitrogen and oxygen atoms through which they can coordinate readily on the metal surface. In addition to this they are readily soluble in acid solution and have low toxicity and are also used in pharmaceuticals.

**Table – 3: Corrosion parameters obtained from weight loss measurements in 5% and 10% HCl of the two inhibitors at room temperature.**

HCl%	Inhibitor concentration (mgs)	Inhibitor	Imersion time (Mins)	Wt. Loss (gms)	IE	Corrosion rate
5%	500 ppm	Blank	30	0.1126		0.0015
		L1	30	0.1045	7.19	0.00139
		L2	30	0.0904	19.71	0.00120
	1000 ppm	Blank	30	0.2069		0.00275
		L1	30	0.1181	42.91	0.00157
		L2	30	0.1226	40.74	0.00163
1500 ppm	Blank	30	0.1503		0.00200	
	L1	30	0.1494	2.59	0.00199	
	L2	30	0.1488	0.99	0.00198	
10%	500 ppm	Blank	30	0.2165		0.00288
		L1	30	0.2017	6.83	0.00268
		L2	30	0.1790	17.32	0.00238
	1000 ppm	Blank	30	0.1769		0.00235
		L1	30	0.1725	2.48	0.00229
		L2	30	0.1618	8.53	0.00215
	1500 ppm	Blank	30	0.2848		0.00379
		L1	30	0.2241	21.31	0.00298
		L2	30	0.1865	34.51	0.00278



5% AT ROOM TEMPERATURE



10% AT ROOM TEMPERATURE

**Fig-9: Plot of Inhibition Efficiency Vs Concentration of 5% and 10% HCl at Room Temperature**

Inhibition of mild steel corrosion in acidic solutions by ligands can be explained on the basis of adsorption. These compounds inhibit the corrosion by controlling both the anodic and cathodic reactions. In acidic solutions the compounds exist as protonated species. These protonated species adsorb on the cathodic sites occurring through the  $\pi$  electrons of aromatic ring and lone pair of electrons of nitrogen and oxygen atoms, which decreases anodic dissolution of mild steel.

The values of metal loss and inhibition efficiencies of all the compounds were found to depend on their molecular structure. The inhibition efficiencies at room temperature have been found to be higher for BAAB at 5% for both 500 and 1500 ppm and for ligand BAMB at 1000 ppm. At 10% the ligand BAMB showed a higher IE at 1000 and 1500 ppm for 5%. At 10% the ligand BAAB showed a much higher IE at all three concentrations.



**Table -4 : Corrosion parameters obtained from weight loss measurements in 5% and 10% HCl of the two inhibitors at 60°C temperature.**

HCl %	Inhibitor concentration (mgs)	Inhibitor	Imersion time (Mins)	Wt. Loss (gms)	IE	Corrosion rate
5%	500 ppm	Blank	30	0.2632		0.00356
		L1	30	0.1005	61.81	0.00135
		L2	30	0.0993	62.27	0.00132
	1000 ppm	Blank	30	0.1318		0.00175
		L1	30	1.1045	20.71	0.00139
		L2	30	0.1214	7.89	0.00161
	1500 ppm	Blank	30	0.1083		0.00144
		L1	30	0.0970	10.43	0.00129
		L2	30	0.0848	21.69	0.00113
10%	500 ppm	Blank	30	0.0897		0.00119
		L1	30	0.0551	38.57	0.00073
		L2	30	0.0674	24.86	0.00089
	1000 ppm	Blank	30	0.0782		0.00104
		L1	30	0.0572	26.85	0.00076
		L2	30	0.0719	8.06	0.00095
	1500 ppm	Blank	30	0.0920		0.00122
		L1	30	0.0554	39.78	0.00073
		L2	30	0.0537	41.63	0.00071

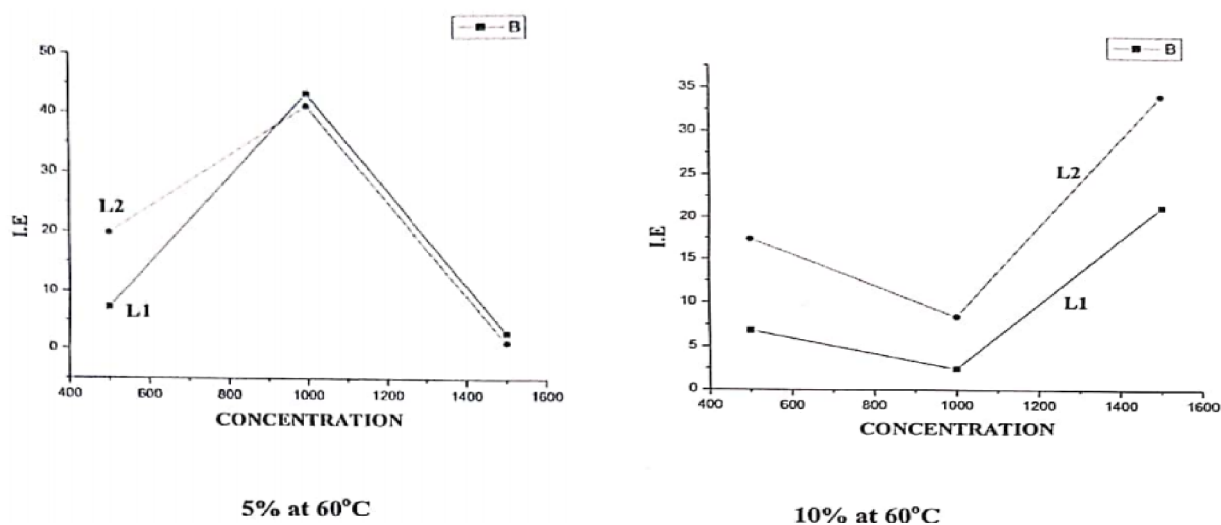


Fig-10: Plot of Inhibition Efficiency Vs Concentration of 5% and 10% HCl at 60°C

### Conclusion

Isolation and structural elucidation of the complex of amino benzyl substituted barbituric acid namely BAMB and BAAB with Zn(II), Cd(II) and Hg(II) ions sulphato, chloro and nitrate complexes were reported. Non-aqueous medium was used for the isolation of the Zn(II), Cd(II) and Hg(II) complexes of both the ligands –BAMB and BAAB. All the complexes were non electrolyte and hydrated. In all the complexes the ligand was bonded to

the metal in a tridentate fashion through amino and amido N atom and carbonyl O atom. IR data confirms the six-coordinate geometry of Zn(II), Cd(II) and Hg(II) complexes of BAMB and BAAB. The values of metal loss and inhibition efficiencies of all the complexes were found to depend on their molecular structure. The corrosion rate showed a marked decrease which makes evident for the inhibiting action of the complexes of both the ligands.

### References

1. A.G. Agababyan, G.A. Gevorgyan, L.P. Podolskaya, T.O. Asatryan, N.A. Apoyan, R.A. Aleksanyan and O.L. Mndzhoyan, *Khim-Farm.Zh.* 15,16-20, 1981.
2. Angustias R.M, Manuel S.J Chel,S.M., Miguel Q., Andrei, B.Polyhedron, 9,(22), 2733,1990.
3. Tramontini M. and Angiolini L., "Mannich Bases-Chemistry and Uses", CRC Press, Inc., USA., 1994.
4. Awadallah R.M., Mohamed A.E., Ramadan A.M., *Indian /journal of Chem.Soc*, 65(8), 532, 1988.
5. K.A. Krasnov, V.G.Kartsev, and A.S.Goroval, "Chemistry of natural compounds", vol.36, No.2, 2000.
6. Maitre M, Hechler V., Vayer P., Gobaille S., Cash C.D., Schmidt, Bourguignon, J.J *Pharmacol. Exp.Ther.* 255,657-660, 1990.
7. F.A. Cotton, L.R. Falvello, W.Schwotzer, C.A.Murillo and G.Valle-Bourrouet, *Inorg.Chem.Acta*, 190, 89, 1991.
8. Synthesis, characterization and antimicrobial studies of new mannich bases of Acetamide, acrylamide and benzamide and their metal complexes, Ph.D thesis of L. Muruganandam, NIT, Trichy, 2009.
9. Nakamoto K., "Infrared and Raman spectra of inorganic and coordination compounds", J. Wiley & Sons, Ed. IV, 79 & 198, 1984.
10. K.Varsneya, *Fundamentals of inorganic glasses*, Society of Glass Technology, Sheffield, 682, 2006.
11. M.I. Ojovan, W.E. Lee, *New Developments in Glassy Nuclear Wasteforms*, Nova Science Publishers, New York, 136,2007.
12. *Corrosion of glass, ceramics and ceramic superconductors*, Edited by D.E. Clark, B.K. Zaitos, William Andrew publishing, Noyes, 672, 1992.
13. D, Song, L. Wang and Xu, *Beijing Shifan Daxue Xuebao*, Ziran Kexueban, 27, 351-53 1991.
14. D, Song, L. Wang and X. Xu, *Beijing Shifan Daxue Xuebao*, Ziran Kexueban, Chem. Abstr. 116, 235594, 1992

## A STUDY TO IDENTIFY VARIOUS FACTORS AFFECTING CUSTOMER LOYALTY IN INDIAN TELECOMMUNICATION SECTOR

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### ABSTRACT

*COVID-19 has caused a disruption in the healthcare sector with a temporary ban on elective surgeries and a long-term impact due to the changing patient sentiment. Hospitals and clinics are finding it difficult to bring back the patient volume in the out-patient department and manage cash flows to sustain the day-to-day businesses. This research is aimed towards studying the impact of Covid-19 on the Health care sector and the Marketing initiative warranted to counter the impact. Exploratory study which is conducted involving Health care service providers, Health care service beneficiaries and Health care service professionals. Comprehensive study has been done to get an understanding of the Healthcare sector and finally understand the transformations it is going through. Devising innovative and adapting to new and innovative marketing practices in healthcare sector is essential to create a pipeline of customers and to sustain their operations. Furthermore, patient sentiment is to be renewed in order to generate surgeries and regularise cash flows which have had a major hit during lockdown. This study is limited to Indian Healthcare sector and companies in the market. Also, the status of the market is dynamically changing increasing more complications in the way a patient perceives a hospital or a clinic safe to visit. Also, most data analysed regarding the sector to provide a historical background to the study is of until 2019 as the current data is unavailable as the financial year being disrupted by Covid-19. A benchmarking on how the healthcare sector must adapt themselves during period of uncertainty and how marketing responsiveness can help in devising the solutions caused by the pandemic situations.*

**Keywords:** Covid-19, Hospitals, Healthcare, Pandemic, infectious diseases

### Introduction

India's inadequate healthcare framework is obviously deficient for fulfilling the needs of her huge and assorted populace. The neglected market gap joined with solid essentials, has driven the market to the development of private healthcare as well as public-private healthcare services, providing a new shape to the nation's healthcare services framework. Today, India owns one of the biggest private healthcare sectors on the planet, principally in light of the fact that the nation's public hospitals have neither the expertise nor the resources available to address the issues of the populace. Furthermore, they are not equipped enough to reach at every nook and corner of the nation. Also, a few of these hospitals and clinics are understaffed, ineffectively prepared regarding fundamental framework and gear, and seriously do not have even essential quality measures. Conversely, private healthcare organizations with world class facilities, employ profoundly gifted and all-around perceived experts, influence cutting edge innovation in medicines, and keep up elevated expectations of value. As a matter of fact, it's surprising in the Tier I urban zones, yet all things considered, the

private division has made an admirable showing in making these pockets of greatness while at the same time creating noteworthy value. The staggering achievement of the pioneers in the sector has supported the rise of numerous institutions and paved the path for overall enhancement promoting top to bottom expertise. The healthcare industry in India is looked upon as a crucial financial stakeholder and a developing venue for strategic investments.

Private institutions possess about 80% of the nation's healthcare services and additionally represent 74% of the nation's expenditure for healthcare.

The Indian healthcare sector is unequivocally upheld by the Government that has taken excellent initiatives to create India as a destination for Medical Tourism. They have an objective of increasing its healthcare expenditure to 2.5% of Gross domestic product from the current degree of 1.1% of the Gross domestic product by 2025 under the National Health Policy 2017.

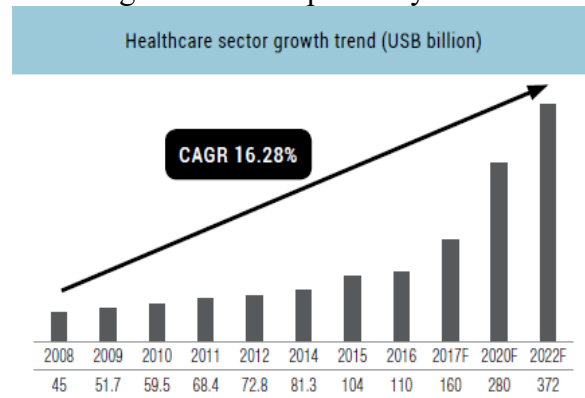
Throughout the years, a few activities to drive the development of the healthcare sector in the nation have been yielding positive outcomes. These activities have gone far in not just improving the general healthcare services

access for the general populace but also has additionally upgraded the nature of healthcare services in the nation. Some significant medicinal services activities attempted in the Union Budget 2019-20 are as per the following:

- A. The assignment to the Ministry of Health and Family Welfare has expanded by 16.28% year- on-year to USD 8.51 billion.
- B. The Government of India has distributed a total of USD 4.40 billion under the National Health Mission.
- C. The Government has reported setting up of 24 new Government clinical schools and clinics by updating existing region medical clinics in the nation.
- D. The Ayushman Bharat – Pradhan Mantri Yojana (PMJAY), the biggest Government financed healthcare program focusing on more than 500 million recipients, has been distributed a total of USD 887.04 million. Also, the Government of India has propelled a library with normalized, real, and refreshed geo-spatial information of all open and private healthcare offices called the National Health Resource Repository (NHRR) in June 2018.

According to a report from the Ministry of Commerce and Industry, the Indian healthcare sector, which remained at a size of USD 110 billion out of 2016, is expected upon to arrive at a size of over USD 372 billion by 2022, taking in account a CAGR of 22%. The medical clinic industry in India remained at USD 61.79 billion in 2017 and is expected to increase at a 16-17% CAGR to arrive at a size of USD 132.84 billion by 2023. The Country positions 145 among 195 nations as far as quality and availability of healthcare services. These measurements demonstrate that there is huge degree for improving healthcare administrations infiltration in India and sufficient open door for the improvement of the healthcare sector industry. Helpful arrangements for empowering FDI, tax breaks, and positive Government approaches combined with promising development possibilities are helping the business pull in private value, investment, and remote players. Today, Indian organizations are going into unions with household and remote organizations to drive development and adding new markets. Proceeding, central factors, for example, rising salary levels, maturing

populace, developing wellbeing mindfulness, and changing mentality towards preventive healthcare are relied upon to support healthcare professionals. The Indian healthcare services area was positioned as the fourth biggest sector with an all-out professional's base of 319,780 individuals in FY17. By 2020, the sector is relied upon to produce 40 million employments in India. The Country is additionally expected to rank among the best 3 healthcare sector markets as far as gradual development by 2020.



Source: Frost & Sullivan, LSI Financial Services, Deloitte, TechSci Research

**Fig. 1. Growth of Healthcare Sector**

With the outbreak of COVID-19 in India and then the follow-up lockdown, the private healthcare sector witnessed a back-breaking slowdown as per various reports from EY, PWC and other consulting giants. The sector is expected to capture short term operating losses of Rs 14,000 to 24,000 Crore for a quarter. For the hospital sector, which is already limited by its availability of liquidity, such losses will completely deplete the cash reserves in a month or two. The revenue for the sector in FY 21 is also expected to drop to 65-80% of the value as compared to FY 20 resulting in negative EBITDA for the full year with annual Return on Capital Employed estimated at -5 to -15%. Highlights of the major impact has been encapsulated below:

A. The industry was already in a very fragile state in the pre-COVID state in terms of its financial robustness but a ban on elective surgeries during the lockdown period has increased the overall burden as elective surgeries were one of the main revenue drivers for these hospitals. A revenue drop of 50-70% in the month of march was observed.

B. The overall Out-patient visits of a hospital had fallen by 80% whereas in-patient volume had dropped by 90%. Only critical cases were

attended, and hospitals were usually swarmed by Covid-19 patients. This is majorly due to the change in patient sentiment towards the hospitals categorizing hospitals as unsafe and infection prone zones which is in fact true to some extent as well.

C. Maintaining infection-free zones in the hospital and upgrading the staff with the necessary gear to safeguard them against the Covid-19 infection has been a top priority for the hospitals. This has added another fixed cost increasing the overall operational cost.

D. Healthcare professionals are also pessimistic about the infection spread and many of them are unavailable due to comorbidity issues. This is in turn contributing to the lack of trained professionals to combat the increasing Covid-19 cases while serving the non-infected patients.

### Literature Review

The purpose of this literature review is to understand the marketing techniques in use in the healthcare services sector and draw insights from the same for the research. Research has been under the following categories:

Marketing has become a crucial part in the activity of healthcare services industry. With the ever-expanding rivalry, healthcare services advertise is experiencing a change from specialist co-op's strength to support searchers inclination. The key components of advertising of social insurance administrations are as per the following:

#### A. Knowledge administration

In the present age, each buyer needs to be served by their one of a kind and individual needs. Associations have likewise outfitted to give modified arrangements, fitting their administrations/items dependent on genuine client inclinations, instead of on summed up suppositions. Henceforth all organizations are abusing the data frameworks and innovation to gather enormous measure of client information, as they comprehend that the information in these gigantic databases is imperative to increase upper hand what is more, bolster different hierarchical choices. There is an extraordinary need of a very much characterized, basic be that as it may, incorporated framework to remove the information on the clients from these enormous databases and at that point to

apply this information for settling on different basic choices, especially advertising choices.

#### B. Customer relationship the board (CRM)

CRM as it called is a significant device to hold clients and to ensure that the informal exposure is guaranteed if possible. Basically, a CRM would remember frameworks of remaining for ordinary touch with clients.

#### C. Brand picture building

Floated by corporatization of human services, India's advancement as a looked for after clinical the travel industry goal and undermined by the mushrooming of new medical clinics, it is getting hard for emergency clinics nowadays to rely upon minor 'verbal' advancement to draw in patients. Clinic administrations are investing additional energy in cutting a brand picture of the emergency clinic and improving medical clinic's perceivability. Emergency clinics can't do extensive advertising. This is the reason brand of an emergency clinic will be assembled increasingly through verbal, buzz showcasing, media perceivability, and tributes by recipients.

#### D. Internal advertising: key component of promoting

Interior promoting rehearses empower emergency clinics to make themselves showcase commendable before beginning outer advertising. Like any showcasing, the idea to be sold must have some an incentive in the psyches of the possibilities. The initial step, subsequently, is to build up an 'offer'. Nobody purchases an idea or an item on the off chance that it has no incentive for him/her. A strong inquiry for the clinic in this way is 'The reason would our kin work more enthusiastically for accreditation? How might this benefit them?' If the administration of the clinic can make an important enough response to this inquiry, the thought would have been sold.

Following these major implications were drawn:

A. Marketing of hospitals to general practitioners (developing referral network) is important as recommendation by 'family physician' is an important influencing factor in patients' decision making.

B. Multispecialty hospital is the need of the hour as patients prefer hospitals providing multispecialty healthcare services.

C. A healthcare check-up package should be reasonably priced as cost is the major

influencing factor when it comes to periodic health check-ups.

D. E-marketing is important as internet is the major source of information among younger generation.

E. In case of OPD patients 'Quick Service' was found to be important and hence efforts should be made to keep waiting time as low as possible.

Internal Marketing has been the forefront for healthcare services to build loyal customers and expand their customer base. There are four components of Internal marketing in the healthcare framework:

#### A. Turnaround time for a patient

This refers to the amount of time spent by a patient at a healthcare facility. Usually a patient wants to spend as minimum time as possible at a clinic or a hospital. Hospitals and clinics also work aggressively to minimize the turnaround time or in the sector term Average length of stay (ALOS) for a customer in order to enhance his experience as well as service to more patients in a financial year so as to increase their financial output. This has been revolutionary since the advent of minimal invasive surgeries, day-care surgeries and reduced infection rates making a patient feel safer and also recover faster than regular surgeries in return harbouring trust in the hospital that he was treated at. This in turn generates word-of-mouth for the hospital increasing the overall patient pipeline.

#### 1. Counter to Admission Time

At hospitals, today the major challenge is to reduce the overall non-clinical time which is essential as well in order to incorporate the right credentials of the patient as well as receiving payments and clearing the patient while checkout. This operational time if reduced provides an ease to the patient where he/she is in the system for a minimal time when they are not attended by a healthcare professional. This enhances the customer experience as well as decreases the operational load at the support staff decreasing the number of touchpoints a patient must go through before getting the required treatment. Technology and AI based interventions has optimized this whole-time frame to minimal providing a greater satisfaction to the patient.

#### B. Friendly Staff and Healthcare

professionals

Nurses, Support staff and Doctors, everyone is being trained in the way they treat a patient when they come in for a treatment. The way a person is received by the hospital affects his perception about the brand. The same love and support is extended to the patient's family and gives a boost to the overall morale of the patient and his/her dear ones giving a hike to the brands image as a supportive as well as empathizing nature.

#### C. Loyalty programs

In-house loyalty programs and benefits for customers is a old tale but recent advancements in the health analytics have enabled healthcare professionals to predict a disease that the patient has a possibility to contract in the near future changing the overall game. From diagnosis we have moved to prognosis making it easier for hospitals and clinics to promote healthy living and wellbeing of the patients. This is an essential part of the loyalty program as hospitals like Apollo under its flagship health check-up program provides preventive healthcare ensuring the patient is protected against any diseases that he/she might be prone to in the near future.

A Preventive Health Checkup intends to recognize and minimize chance elements not withstanding distinguishing ailments at an early phase. Standard wellbeing tests can help discover issues before they start or early enough when chances for treatment and fix are better. By getting the correct wellbeing administrations, screenings, and medicines at the perfect time, chances for living a more drawn out, more beneficial life are better. This has been the pioneering effort all hospitals are making in order to develop their brand as well as to provide a quality life to its patients.

In contrast to the 4 P's of showcasing, the social insurance space is characterized by 5 P's wherein after Product, Price, Place and Promotion comes Principles.

A brand is considered as solid as its Principles/Standards. Standards are the methods by which organizations will secure their notoriety. At the point when any organization builds up its image suggestion, it builds up a lot of fundamental beliefs. There are various instances of these qualities all through the human services industry. For instance, the

establishing standards of the NHS have been summed up as the arrangement of value care that: addresses the issues of everybody; is free at the purpose of need; and depends on the patient's clinical need not their capacity to pay. Numerous different countries have composed their medicinal services frameworks as indicated by standards picked to assist them with besting address the issues of buyers. Similarly, Canada put together its human services framework with respect to the standards of completeness, all-inclusiveness, convenience, availability, and policy management. Advertisers in this manner need to guarantee that, according to their clients, 'standards' are principal to the manner in which they work together. Standards can give a ground-breaking advertising stage — not the advancement of a rundown of qualities, however the key reconciliation of standards into the promoting blend itself and being seen reliably to do the 'proper thing' according to one's partners. All together for the association's qualities to have meaning they need to wake up in its ordinary business movement. In this way, standards are the use of the organization's business esteems and the essential reason for producing and keeping up shopper trust. Standards join chance administration, moral showcasing, and social duty, and they support corporate and item marking.

Instances of how the disappointment of a brand to satisfy its standards can affect deals are ordinary in business writing. An ongoing model is that of 'Blameless' — an organization that makes natural product 'smoothies' without utilizing fake fixings. Honest as of late endeavoured to expand its deals through the development of its dissemination channels by making Innocent smoothies accessible in McDonald's outlets. This caused a huge response from its client base, which saw the relationship of Innocent smoothies with a cheap food organization as improper. Basically, Innocent was seen by its clients as having sold out its very standards of business; and due to this their customer base plunged.

Mix of the fifth 'P' signifies pondering standards in precisely a similar path as contemplating different parts of the advertising blend — by perceiving and engaging the client's still, small voice; or, at the very least, not participating in

exercises that would cause clients to feel awkward about working together. This is the reason 'standards/principles' must turn into the fifth 'P' promoting of healthcare services. Standards matter to clients, in this way, they should matter to advertisers — particularly healthcare advertisers.

General wellbeing experts presently perceive the estimation of network-based ways to deal with social change. In a perfect world, social showcasing experts will create approaches to join buyers as accomplices into the arranging procedure, permitting them to set plans and legitimately take an interest in endeavours to enhance the issues they choose to handle. Network based anticipation showcasing is one model that mixes network activation, strengthening and participatory examination with promoting standards and procedures trying to adjust the force differentials between general wellbeing professionals and purchasers while profiting by advertising's way to deal with social change. Thus, be SMART in social advertising as follows:

**Strategic:** by understanding need-explicit conduct target, and information, practices and conviction frameworks winning in the network.

**Measurable:** For process changes in strategy and framework, media inclusion, dispersal of materials, co-operations, commitments from sources, evaluation of program. For result changes in conduct, information, convictions, crusade mindfulness, consumer loyalty, reactions to battle.

**Awareness-based:** Awareness with respect to the need and significance of changed conduct which is helpful for wellbeing.

**Realistic:** Need-based subject for social promoting whereby relational abilities and the procedure of social showcasing ought to be generally speaking to the shoppers. Accessible assets likewise are significant in arranging.

**Technically Sound:** With every one of the 4 Ps of social promoting it is significant for all medicinal services laborers to comprehend and react to the open's wants and needs and routinely use purchaser exploration to choose how best to help individuals to take care of issues and acknowledge goals.

Any social promoting approaches fuse pre-and post-evaluative measures for their adequacy. It will be essential to survey and update the

methodologies all the time (for example each three to five years). With the assistance of maintainability continuum of social promoting (specialized, money related, authoritative and showcase manageability), shoppers' lives can be made more beneficial.

Healthcare services ought to be driven by a steady spotlight on conveying results that genuinely matter to patients. Be that as it may, this drive towards Value based Healthcare service (VBHC) is blocked by a lack of straightforward and normalized results information. Further, an absence of clearness with respect to the meaning of significant worth has prompted different methodologies and moderate advancement in execution improvement. Some utilization the term 'worth' to pass on the humanistic precepts supporting wellbeing frameworks, while others utilize the term to allude to cost decrease and by and large procedure productivity. Philosophical worth and cost regulation are both significant, nonetheless, improving wellbeing results are fundamental to esteem creation. The meaning of significant worth in medicinal services is results that issue to patients partitioned by the expense to accomplish these results. This definition was presented by Michael Porter and Elizabeth Teisberg in their fundamental book *Redefining Health Care* – a work that propelled the whole field of Value-Based Health Care. In this worth proportion, the numerator (results) assigns condition-explicit outcomes that issue most to patients, for example, utilitarian recuperation and personal satisfaction, while the denominator (cost) applies to the all-out spending for the full pattern of care. Appropriately, if results that issue to patients are not improved, the subsequent worth is low. This definition applies to the sum of the consideration pathway, from essential to optional and tertiary consideration, including post-medical clinic care for patients influenced by a solitary or different condition. In any case, the present social insurance quality is intensely centred around process measures and, regardless of endeavours to present rules, agendas and normalized quality measures, suppliers fluctuate in procedures and results to a striking degree. Those rewarded at the least performing medical clinics require follow-up medical procedure inside two years at rates that are multiple times higher than patients rewarded

in the highest-level emergency clinics. At present, not many wellbeing frameworks survey sway on personal satisfaction from the viewpoint of the individuals they serve. Execution measurements in wellbeing will in general spotlight primarily on sources of info and yields. Results, for example, future are significant, yet measurements don't frequently exist on results that patients genuinely esteem, including agony, usefulness and personal satisfaction. To fill in these holes, the Organization for Economic Cooperation and Development (OECD) got an order from Health Ministers, to dispatch the Patient-Reported Indicators Surveys (PaRIS) activity in 2017, with the objective of benchmarking results that issue most to patients. Result variety is likewise affected by instalment models. Expense for-administration models boost suppliers to expand administration volume, which can create overmedicalisation and inefficient spending. Pointless medicines can be performed without complexities, in this manner staying undetected even though they don't improve patients' personal satisfaction. Suitability of care is vital to esteem. The best way to assess the genuine estimation of care is to gauge persistent wellbeing increases as per what they consider generally significant in their everyday life. Estimating aftereffects of a treatment from the patient point of view is fundamental to improve its worth.

This value-based healthcare service system would increase the trust of patients in the hospitals.

### **Research Methodology**

The research has been done by capturing data through extensive interviews of Health-care professionals and Non-clinical stakeholders across the sector. Also, to encapsulate a better understanding interviews of medical students has been taken in order to understand the best practices being taught currently as a part on how to interact with patients. Following which few conferences were attended virtually that were held by various organisations to create a forum to talk about best practices during the pandemic and how the hospitals are working through it. Post the interviews an overall understanding of the market and the current processes in place to bring back the patient flow is encapsulated in



the research paper. Also, keeping in mind the market trend, future predictions are made as well.

Number of Doctors Interviewed – 44

Number of Non-Clinical Stakeholders Interviewed – 22

Number of conferences attended – 3

Some of the questions that were asked during these interviews are listed below:

A. What was the patient flow like during lockdown?

B. What are the specialities which were functional during lockdown?

C. How is E-consultancy shaping the industry?

D. What was the percentage of E-consultancy in the total out-patient volume during lockdown?

E. What are the initiatives taken by hospital to build back the customer pipeline?

F. What are the communication methodologies used by hospitals?

G. What are the new areas of development?

H. What has been the cash-flow during the lockdown?

I. What has been the cash-flow post lockdown?

J. What are the new avenues of marketing?

K. What are the USPs hospitals are trying to develop post lockdown?

L. How is the patient sentiment changing?

M. What is the expected patient flow post lockdown?

N. How are the healthcare service providers shaping the industry?

O. What are initiatives taken for internal marketing?

P. How are you ensuring safety of your employees?

Q. How are you ensuring safety of patients?

### RESULTS & Analysis

After encapsulating the information attained from the interviews, marketing trends post-lockdown was observed to check the similarity between the information and ongoing events. Following are some of the post-lockdown trends observed:

A. The overall patient sentiment remains unchanged. Since corona is not over, patients are still hesitant to approach hospitals directly and restrict themselves by reaching out to family doctors and hospitals through online network.

B. Hospitals are still finding it impossible to manage cash flows due to low patient inflow. They are working on new

innovative methods to bring back patients.

C. Healthcare professionals and support staff are more worried about their safety as the ban on elective surgeries has been lifted. Orthopaedic surgeries are very infectious and nature and can lead to infecting everyone in the Operation Theatre if the patient has Corona and vice-versa if anyone from the medical team has corona.

D. Covid-19 care at home is a new product being explored by all hospitals for generating a new source of income. In one of the articles Fortis Hospitals reported that they have over 100 patients under the same program and there is a waiting queue for many others who want to get enrolled for the same in Delhi and Mumbai.

E. Remote care facilities such as E-consultancy and Telemedicine has seen a hike. A lot of patients have started in flowing through these channels. Before lockdown this consisted of only 5% of the total patient volume but now consists of almost 60% of the total patient volume.

F. Extended care such as medicine deliveries and remote monitoring, a part of the Covid-19 care at home has rapidly picked up pace generating new avenues for cash flow.

G. Patient awareness programs are being conducted over Facebook, Instagram, Quora, and YouTube to educate them with the right steps to take in case of an emergency. “How to deal with a heart attack?” and or “Precautions for a pregnant lady” are the common points of discussion in such awareness programs.

H. Patient education aimed towards Corona infection and basic prevention techniques is also shared as a branding tool. Going one step ahead, hospitals are also stressing on the age group and criticality of the patient assessing which he/she should be admitted to a hospital or not is being propagated through online channels.

I. Government has allowed private hospital facilities to conduct corona research in accordance with ICMR allowing them to pour in their expert teams in the race to a vaccine. Individual hospital brand's contribution in this race is also being used as a branding tool.

J. The number of corona-cases recovered at a

- hospital is also being as a branding tool.
- K. The capacity of a hospital is limited, and the hospital must prioritize which patients they want to cater now since the bed vs population ratio is very low. Considering the same emergency and trauma beds have been converted to corona beds. Ticket size for corona beds is higher than emergency beds and hence it is helping them bring back cash flow.
- L. Risk free zones are being created in hospitals with separate pathways for corona patients and non-infected patients to promote the overall safety in the hospital.
- M. Overall patient journey is changing as it has become mandatory for any patient who is supposed to be admitted, to take a corona test before admission. This is in general increasing the cost of treatment for the patient and the operational cycle for the hospital. For example – the balloon time for a patient for a cardiac arrest is 90 minutes but now with respect to corona, the balloon time has increased to 150 minutes increasing the risk rate in such a case.
- N. Elective surgeries are still being postponed if the quality of life of the patient is unaffected by the same. For instance, a joint replacement surgery cannot be postponed as it directly affects the quality of life a patient leads but cosmetic surgeries can be postponed as it does not impact the lives of the patients directly.
- O. Innovative methods like digital surgery, robotic surgery and remote monitoring techniques are being explored by hospitals to decrease human intervention in surgeries and check-ups providing the patient assurance against any possible infection.
- P. Hygiene has become the principal parameter and is looked over with a more detailed lens in order to ensure proper sanitization across all levels of a hospital.
- Q. PPE gears are made mandatory in a any surgical intervention so as to safeguard the patients, healthcare professional and the support staff against any possible infection increasing the overall cost of the procedure. This is a challenging thing for the hospitals as this increases the cost borne by a patient for that procedure.
- R. Voice of a happy customer is being resonated across different social media channels in order to generate a positive word of mouth for the hospitals.
- S. Finally, hospitals are looking forward to strategic partnership for Continued Medical Education and skilling up all level of healthcare professional against corona in order to control any damages and provide the best of healthcare to its patients at all times. For this already Subject matter experts are being called in regularly to conduct webinars, and workshops so that the best practices can be developed, and all professionals are equipped with the same.
- After taking in account the observations the following marketing revamping efforts have been recognized that can deal with the aftermath of the Covid-19:
- A. Preventive Healthcare System – More than earlier people everywhere now are more aware of the consequences of leading an unhealthy life and the issues that can arise from the same. For this they have already opted in to maintaining a hygienic life due to corona. Following this preventive healthcare system marketing will attract more patients who could enrol into this program and provide a stronger channel of cashflow for them.
- B. Optimizing the processes – Hospitals have already begun branding themselves with how optimized and unique their processes are and how secure they have made it for a patient to avoid any risk to infection. For instance, Fortis Hospital, Bannerghatta Road, Bengaluru have deployed robots at their entry points in order to check the temperature of the patient and also assign appointments according to his query.
- C. Social Media Channels – At this current age social media is helping the hospitals to communicate and establish their brand in real time giving them enough space to project their expertise and USPs helping them showcase their brand to the world.
- D. Awareness Programs – This is an old tool which is applicable always. This will help them attract more customers who start in believing in their brand.
- E. E-consultancy and Telemedicine – Recent changes in laws related to telemedicine has freed up this space for more private

interventions and has allowed extensive communication with patients in a pandemic through telemedicine and e-consultancy. These channels should be strengthened in order to generate more in-patients through the same and finally remote monitoring solutions should be developed to cater a large group of issues online.

- F. Identification of at-risk patients - Sharing of health data with preventive healthcare system has enabled the hospitals to identify at-risk patients and conduct surgeries which would prevent any life and death situation. Extensive research is needed in this domain with adequate marketing in order to include more and more people in this program so that a greater number of surgeries could be generated.
- G. Value-based programs – Due to a fall in the purchasing power of a consumer hospital should come along with value-based programs which could help the patients with respect to their money problems helping them prioritize their health. Such programs would decrease the profitability of a surgery or a procedure but increase the number of patients attended by the hospital in turn increasing the overall revenue of the hospital.
- H. Word-of-mouth marketing – Existing patient videos to be put across platforms showcasing the care and safety provided the hospitals generating brand value to the hospital.

All the eight efforts are already in some way or the other being made by several institution to channel back the patient flow and the government has also taken initiatives to ensure that the debt burden on the hospital is decreased by postponing interest payments on their debt. Healthcare sector employs a large group of our population and its survivability is essential for the growth of the country

### Conclusion

Healthcare system is a very crucial sector for the well-being of the people and its survivability came in question with the pandemic. It is a sector that does not work on reserves and is highly capital intensive leading to a huge debt. Right now, all efforts are being made in order to bring back the cash flow for sustaining the business as well as the livelihood of all the healthcare professionals, support staff as well as partner businesses who heavily depend on the functionality of these businesses. After an in-depth research of the existing marketing efforts, eight different ways – Preventive healthcare system, Optimizing the processes, Social Media Channels, Awareness Programs, E-consultancy and Telemedicine, Identification of at-risk patients, value-based programs and word-of-mouth marketing, have been identified in order to bring back the patient volume and eventually the cash flow. This will set the industry on a path to normalcy and would create a new cycle.

### References

1. Crié, D., & Chebat, J. C. (2013). Health marketing: Toward an integrative perspective. *Journal of Business Research*, 66(1), 123-126.
2. Butt, I., Iqbal, T., & Zohaib, S. (2019). Healthcare marketing: A review of the literature based on citation analysis. *Health marketing quarterly*, 36(4), 271-290.
3. Bhangale, V. (2011). Marketing of healthcare services in India: a study on factors influencing patients' decision making on choice of a hospital. *Journal of Management & Marketing in Healthcare*, 4(4), 229-233.
4. Erdem, S. A. (2008). Healthcare marketing on the web: Moving forward toward more interactive practices. *Health Marketing Quarterly*, 24(1-2), 35-49.
5. Fortenberry Jr, J. L., & McGoldrick, P. J. (2016). Internal marketing: A pathway for healthcare facilities to improve the patient experience. *International Journal of Healthcare Management*, 9(1), 28-33.
6. Gray, S. J. (2008). Healthcare marketing has five P's. *Journal of Management & Marketing in Healthcare*, 1(3), 306-313.
7. Hammond, K. L., & Jurkus, A. F. (1994). Healthcare professionals and the ethics of

- healthcare marketing. Health marketing quarterly, 11(1-2), 9-18.
8. Pleasant, J., VEST, D., & MOSES, C. T. (2010). Effectively Marketing Managed Health Care: A Look at the Role Marketing Mix Variables Play in the Delivery of Health Care. *i-Manager's Journal on Management*, 5(1), 1.
  9. KIYAT, G. B. D., Şimşek, H., & Özgüleş, B. (2017). Sağlık hizmetleri pazarlamasının diğer pazarlama dalları içindeki yeri ve önemi. *Sağlık Akademisyenleri Dergisi*, 4(3), 147-154.
  10. Menon, A. M., Deshpande, A. D., George, M. Z., & Perri III, M. (2004). A model assessing the effectiveness of direct-to-consumer advertising: integration of concepts and measures from marketing and healthcare. *International Journal of Advertising*, 23(1), 91-117.
  11. Peltier, J., Nill, A., & Schibrowsky, J. A. (2003). Internal marketing, nurse loyalty and relationship marketing: An exploratory study of German nurses. *Health Marketing Quarterly*, 20(4), 63-82.
  12. Aras, R. (2011). Social marketing in healthcare. *The Australasian medical journal*, 4(8), 418.
  13. Wright, G. H., & Taylor, A. (2005). Strategic partnerships and relationship marketing in healthcare. *Public management review*, 7(2), 203-224.
  14. Kennett, P. A., Henson, S. W., Crow, S. M., & Hartman, S. J. (2005). Key tasks in healthcare marketing: assessing importance and current level of knowledge. *Journal of health and human services administration*, 414-427.
  15. Hawes, J. M., & Rao, C. P. (1985). USING Importance--Performance Analysis To Develop Health Care Marketing Strategies. *Journal of Health Care Marketing*, 5(4).
  16. Joshy Mathew, K. (2020). Major Asian Stock Indices Inter-Relations During Pheic Declarations; With Emphasis To Shcomp. *Dr. JB Shah*, 32

## CONSUMER BEHAVIOR OF ASU 25 IN TOBACCO INDUSTRY IN RESPECT TO OFFERINGS, ADVERTISEMENTS, HEALTH WARNINGS, AGE AND PRODUCT DIFFERENTIATION

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### ABSTRACT

Every company in an industry strives to gain market share by venturing into new product offerings, becoming destination of loss for competition and launching new brands for different set of consumers. However, when we talk about cigarette industry, we know the loyalty is close to 90% in smokers. Consumer behavior is dependent on many parameters like price, product, promotion, availability and social environment. This paper attempts to find out the different factors and their significance in driving this loyalty in consumer behavior. For this study, in-depth secondary research has been conducted taking multiple research papers into consideration. Industry stalwarts were reached out to collect relevant and helpful data to understand the consumer behavior this particular industry space better. Telephonic interviews were conducted to understand the behavior of consumers in detail and then survey questionnaires were floated to record the results for the behavioral aspects of consumers. POS advertisements are the only way of advertisements for cigarette companies to influence consumers under Cigarette and other Tobacco Products Act, 2003. Within this article attempts have been made to unfold the consumer behavior with respect to various factors involved in cigarette purchase. As the industry rides too high on loyalty, destination of loss only becomes possible when there is scarcity in supply. ASU 25 age group has been selected because after 25 most of smokers choose one of the smoking brands and stick to it for most part of their smoking life and influence of any factor is close to negligible on them. As far as tobacco industry is concerned, there is very little literature available on it let alone the consumer behavior which is ever changing. Although, there have been many studies in the past highlighting some factors of consumer behavior and smoking habits.

**Keywords:** Cigarette Industry, Consumer Behavior, Smoking, ASU 25

### Introduction

India is known mainly for the production of two types of tobacco namely non-cigarette tobacco and cigarette tobacco. Non-cigarette tobacco accounted for approximate 70% of the total market share. Non cigarette tobacco has seen a recent uptrend in sales due to a shortfall in cigarette tobacco production. It is very surprising to note but khaini that is edible tobacco holds close to 3% more market share than beedis and cigarettes combined. State relies on indirect taxes and cigarette claims to be one of the major factors driving the sales tax across different states and the data shows that almost 85% of the tax revenue is driven by legal smokers which accounts only for 10% consumers. It can be successfully inferred that even if the use of smokeless tobacco surpasses smoked tobacco multi fold, still smoked tobacco is single handedly driving the revenue. Tobacco is substantially eaten by Indians, including inducing addiction and intoxication. India being the 2nd biggest tobacco producing country having an annual yield of around 800 Million kilograms. Out of total arable land

available in India, tobacco is estimated to cover just 0.24%. Flue-Cured Virginia accounts for almost 30% of the total tobacco produced in India underlining the cigarette consumption. With a production figure meagrely shy of 250 Million kgs, India holds the third position in global production ranking of FCV tobacco. In poor, fertile soils that are usually insufficient for other crops to cultivate, tobacco grows. FCV tobacco is considered to be the most remunerative crop as per the research conducted by the Central Tobacco Research Institute (CTRI).

80 percent of tax revenue is contributed by legal smokers, considering just a 9 percent share of cigarette consumption. The government tax is 41 times higher for cigarettes than for other tobacco products on a per kg basis for tobacco used in various product categories. Inequitable tobacco taxation policies are leading to an uptick in overall tobacco use while cigarette use is declining. India's use of tobacco in the form of cigarettes, while accounting for 18 percent of the world's population, is less than 2 percent of

the global intake. However, India accounts for 69 per cent of the world's smokeless tobacco consumption. India has the lowest per capita intake of tobacco worldwide, with just 89 cigarettes a year. Cigarette & Tobacco Products contribute considerably to the country's tax collection. The estimated tax revenue from collected tobacco products is over Rs. 43,000 crores per year.

Now, after understanding the Indian architecture of tobacco industry, we delved deeper into the factors that have an influence on consumer's behavior. After thorough research, we were able to spot 7 factors which have considerably high amount of influence in turning nonsmokers into smokers, influencing them for choosing a cigarette brand and influencing a smoker to change a brand he is loyal to. Following are the 7 factors that have been recorded:

- Favors
- Packaging
- Filter Ventilation
- Taste and quality of tobacco
- Quantity of tobacco
- Advertisements
- Availability

### Literature Review

(Reinskje Talhout, Patricia A. Richter, Irina Stepanov, Christina V. Watson and MPH Clifford H. Watson) have suggested in their study that the design characteristics of a cigarette like the filter ventilation, flavors and threads etc have a great impact on consumer behavior, perception and smoke emissions. Elasticity which can be described as the ability being imparted to a smoker to have required nicotine content from a cigarette has largely been associated with filter ventilation. It has also been focused that dimensions also play an important role like the less tobacco content available in slim cigarettes causes lower exposure among smokers which is perceived to cause less harm. Charcoal filters being used in modern times also lead to a reduction in harm because of less smoke emissions. Capsules along with decorative threads make the cigarettes appealing which has become really popular among the women smokers. They have put forth that these parameters can play their role very well to reduce smoking related health

issues.

(Jennifer M. Kreslake, Geoffrey Ferris Wayne and Gregory N. Connolly) have tried to establish a difference between the smoking behavior of menthol and non-menthol smokers. It has particularly been found that menthol smokers comprise two categories of smokers:

- a) Those smokers who are intolerant to the irritation and harshness caused by smoking non menthol cigarettes.
- b) Those who are particularly fond of the menthol flavor in their smoke

It has been pin pointed in their study that a lot of women smoker's smoke only because of the menthol flavored cigarettes on the shelves. It has been established that menthol cigarettes become the go to cigarettes for the people about to start their smoking journey because it is believed to have less harsh effect on the throat. Further studies to establish a proper conclusion has been suggested.

(Dean M. Krugman, William H. Quinn, Yongjun Sung and Margaret Morrison) have depicted through their study how even after the advent of 1998 Master Settlement Agreement advertisements and promotions undertaken by the cigarette companies encourage more people to join in the breed of smokers. Since the youth is more appealed by the imagery used for advertising, they form a major chunk of new joiners in the smokers' group. Even before being in the age of understanding what health effects smoking might have, the youth is influenced enough by the advertisements. Peers are believed to influence the adolescents the most in their path to start smoking. Although cigarette brands put forth an argument that the advertisements and promotions are just to help the existing smokers to switch between various brands, it has been well established in this study that these measures influence a whole lot of people to start smoking.

John Dawes' study has brought into light the brand loyalty smokers have with respect to their cigarette and what all factors affect their purchasing patterns. Most of the smokers are really particular about the brand they smoke and rarely switch to any other brand. In case they do so, they tend to switch to another in line brand with the one they are already smoking and not any lower brand going along the lines of Duplication of Purchase law. Also,

more penetrated brands are the ones with higher brand loyalty as compared to the less penetrated ones. Unlike the general market trend, segmentation and targeting come out to be counterproductive in case of cigarettes as to a brand having a high appeal in a particular group might be a having a less market share in other group. Excessive cannibalization can also be seen in the brands floated by the same organization.

(John P. Pierce, Won S. Choi, Elizabeth A. Gilpin, Arthur J. Farkas and Cherry C. Berry) conducted a study so as to establish a relationship between the new uptake of smoking and reception of tobacco advertisements. Advertisements and promotional campaigns have come out to be a major factor to stimulate smoking among millenials. As compared to the adults, the adolescents aged 14-17 years are more likely to remember any tobacco ads and hence start their smoking journey. The fact that additional incentives really affect the consumer behavior has been set up by this study. It has been found out that the adolescents who claimed to never smoke in their life thought of giving it a try after watching various advertisements which in many cases lead to an addiction. The findings have come out to be in consistency with the fact that the change in behavior is directly linked to the reception of the communication. Adolescents become prone to this habit of smoking while being in a particular age group and once they have surpassed that age and become mature enough to understand the repercussions of smoking, they prefer to not start it.

(Benjamin Lê Cook, Geoffrey Ferris Wayne, Lois Keithly and Gregory Connolly) want to convey the fact that most of the tobacco companies design their products after diving the consumers on the basis of their psychological and psychosocial needs. Based on the different product requirements by different consumer groups like those wanting a harsh and strong smoke, those wanting flavors in their smoke, women groups favoring a particular type of cigarette, the taste, fragrance, size, filter quality etc of the cigarettes is varied. Also, to implement the cessation strategy a particular consumer group should be targeted which is also very important owing to the fact

that tobacco consumption leads to a major chunk of deaths nationwide. It has been reflected in their study that through a regulation on the companies designing their products according to consumer needs, the new joiners in this smoking journey can be controlled. Organising public campaigns to target the same groups to teach them about ill effects of smoking has been suggested.

(TEH-WEI HU, HAI-YEN SUNG, and THEODORE E. KEELER) have conducted a study on the cigarette industry's response to an anti smoking campaign conducted by the state of California. This was done by passing CTTHP act wherein the tax implied on the tobacco products was increased and the revenue so collected was used to teach the population about the health effects of smoking. This was the first paid advertising conducted by any state for the welfare of people. It basically targeted the following groups:

- A) Pregnant ladies
- B) Minorities
- C) Adult smokers
- D) Children

The industry responded by increasing the expenditure on advertising and tapping more channels to promote their products. As a result it came out in the open that diverting funds into other channels of marketing proved to be more cost effective for cigarette industry rather than following the traditional methods to counter state campaign.

(Mark Nichter and Elizabethca Rtwricht)'s study focuses on the mela fide intention of the governments to obtain revenue from the taxes imposed on tobacco products that they hideously support them hiding themselves behind the public image of them being against smoking. It shows how smoking not only affects the smokers' health but also of his family ( them being the passive inhalers ). Also, the resources expended in smoking can always be put to more fruitful uses like the education and welfare of the children. This concept of ill effects of smoking is being put forth at a time when US is working towards child survival programs focusing on their immunization and rehydration. It has been advised that the data collected should not just be presented and forgotten. Rather it should be taken seriously as the consequences of

smoking are severe. States must focus on developing new laws and acts that pay more attention to the public health.

(Adrienne B. Mejia and Pamela M. Ling) have written about the newly discovered smokeless tobacco products and termed them as the pandemic for the new age. Although smokeless tobacco products are equally addictive and can lead to various diseases like cancer, heart ailments etc, it is still the non cigarette product claiming highest market share. It has been reflected in the study that if cigarettes and smokeless products are used simultaneously, they can lead to an increased deterioration in the health of consumers. It can have other harmful effects as to people thinking of quitting might just shift focus to the smokeless products and continue affecting their health. It is being majorly introduced in the places having smoke free laws. The way these products are advertised and packed is particularly very appealing to millennial population and is attracting them in huge numbers to start consuming smokeless products. It is being positioned as a product that gives you the relief and satisfaction of smoking even during indoor endeavors. It has also been pointed out that the older and long time smokers preferably smoke regular cigarettes than these smokeless tobacco products.

(Susan L. Holak & Srinivas K. Reddy) have tried to establish a relation between elasticity of price and the shocks the industry faces due to advertising ban. In such a scenario, the price sensitivity relating to demand is believed to increase. Also, people become less aware of the new entrants in the market and likewise are less likely to try any new products. It has been suggested that such advertising bans might act as entry barriers for new launches. Cigarettes and other tobacco products are categorized under experiential goods according to this research. Inelasticity in demand is witnessed owing to a ban of advertisement on popular channels like radio and television. In such a situation, past experiences with different brands mark the relative purchase of a particular brand and as such new and weaker brands are sort of suppressed. But it was also found out that this ban had less impact than other advertisements that show the harmful

consequences of smoking to mark consumption.

### **Research Methodology**

This research was primarily conducted to understand the influence of different factors on consumer behavior while selecting or choosing a cigarette. Cigarette addiction, as we all know is due to the high amount of nicotine present in cigarettes but what makes them so loyal about one brand is the subject of interest. Practical papers written over time in different parts of the world have been studied to understand the influence of various factors like product offerings, filter ventilation, favors, climate on consumer behavior as we know it today.

The available literature shows us that consumer behavior is more or less dependent on various different factors and it changes from age to age, city to city and one economic section to the other. This whole research is conducted in two phases: Secondary research and Primary research. Initially secondary research was carried out by reading different research papers available and primary research was conducted by having in depth telephonic interviews and then floating a questionnaire survey amongst the smoker group helping us to understand the dependence of consumer behavior on various different factors associated with smoking and tobacco. We have already gauged that consumer behavior is dependent on various different factors in any given industry be it food, hospitality or retail. The questionnaire designed is very extensive and helped us picking out the most important factors influencing consumer behavior.

The telephonic interviews were conducted to understand the various intricacies related to the smoking habits. 23 interviews were taken and enough of insights were gathered to create an exhaustive questionnaire to comprehend consumer behavior in tobacco industry. A total of 202 responses were recorded from questionnaire survey which were later analysed to draw conclusions for further reference.

The insights from interactions with knowledgeable people and industry experts were curated which were later used to design extensive questionnaires to understand the consumer behavior in the current scenario of ASU 25. The sole purpose of this whole study



was to decipher the dependence of consumer inclination on various smoking factors to choose or leave a particular brand.

Questionnaire given was as follows:

What is your age?

- 18-20
- 20-22
- 22-25
- 25+

What influenced you to start smoking?

- Curiosity
- Friends
- Depression
- Stress
- Enticed by smell

Which is your Preferred Brand

- Marlboro
- Classic
- Gold Flake
- Others

Which is your Preferred cigarette

- Marlboro Advance
- Marlboro Lights
- Classic Milds
- Classic Ultra Milds
- Classic Regular
- Classic Ice Burst

Which cigarette you started smoking with?

- Classic Ice Burst
- Marlboro Gold Advance
- Marlboro lights

What influenced you to smoke this cigarette?

- Friends
- Mildness
- Filter Quality
- Taste

Rate the factors given below according to their influencing capability

Factor	1	2	3	4	5
Pack Attractiveness					
Brand Image					
Smoothness					
Tobacco Quality					
Filter Proposition					

Table 5: Correlations among the different motivation factors

Rate the factors of competitive brand that you smoke

Factor	1	2	3	4	5
Advertisements					
Tobacco					
Image					
Popularity					
Filter					
Stick					
Pack					

What is your perception about Classic/Marlboro/Gold Flake/Dunhill?

Do you remember seeing any kind of cigarette endorsement? If yes, then what comes top off your mind?

What kind of advertisements would you like to see for cigarettes?

Do you ever order online?

Do you ever research about cigarettes on internet?

- Yes
- No

What kind of information you look over internet about cigarettes?

- Health Effects
- Quality
- Different product offerings

Do you think packaging affects your preference of buying a cigarette?

What other cigarettes have you consumed and liked? (Substitutes of your fav brand)

Do you like cigarettes with capsules/favors?

- Yes
- No

What kind of capsule offers do you like?

- Menthol Capsule
- Two Menthol Capsules
- Menthol & Fruity Capsule
- Favored Pine

### Data Analysis & Findings

The findings are based upon the analysis of both primary and secondary research wherein research papers were read to review available literature to understand the various factors having an impact on consumer behavior and the influence of these factors. Through telephonic interviews and questionnaire surveys, the consumer data was recorded to check the dependence.

To understand the factors responsible for the consumer behavior after extensive research,

this paper aids all the factors responsible in smallest way possible to influence the consumer behavior. Following listed are the factors that have been found during the research:

- Favors
- Packaging
- Filter Ventilation
- Taste & Quality of tobacco
- Quantity of tobacco
- Advertisements
- Online search
- Smoothness

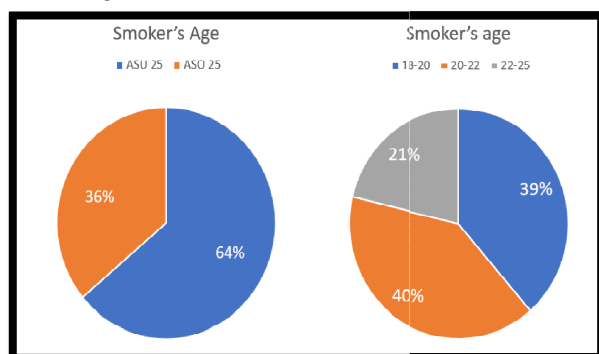
All these factors were later verified by leveraging the questionnaire survey which was floated among the smoker community of different age groups to understand the dependency of consumer behavior on these factors.

Here we understand the prominent factors influencing consumer behavior related to smoking and what the degree of influence of all these factors on different age groups. There is a great space to get to the root of this behavior which might have been missed due to some limitations.

Survey Results:

What is your age?

- 18-20
- 20-22
- 22-25
- 25+

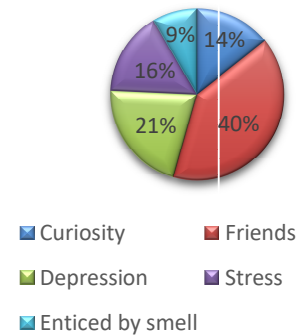


To start with, a record of age of respondents was kept to deeply analyse the consumer behavior with respect to all the factors assuming that different age group of smokers behave differently to different kind of influence. Since the study was more focussed on ASU 25, more of that audience has been targeted.

What influenced you to start smoking?

- Curiosity
- Friends
- Depression
- Stress
- Enticed by smell

Factors influencing smoking

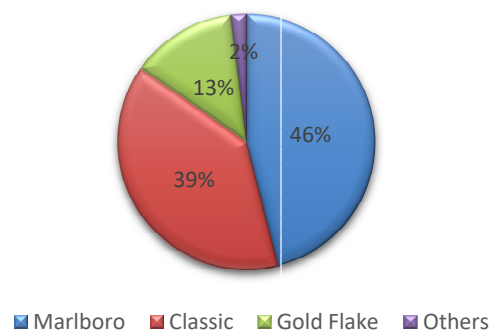


Through this study, it came out that most of the ASU 25 uptake smoking because of the suggestions and influence of their peers followed largely by the issue of depression which might happen due to varied reasons. Stress, curiosity to explore how smoking turns out and attraction towards smell are other factors that influence commencement of smoking.

Which is your Preferred Brand

- Marlboro
- Classic
- Gold Flake
- Others

Brand Preference

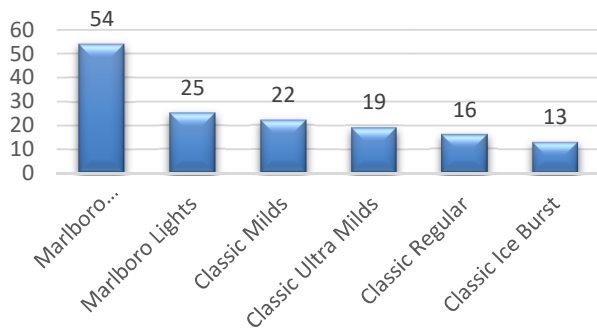


Marlboro has emerged as the most preferred brand among ASU 25 smoked by almost half of the population followed by classic. It can thus be inferred that the younger population is more inclined towards Marlboro for their smoking needs.

Which is your Preferred cigarette

- Marlboro Advance
- Marlboro Lights
- Classic Milds
- Classic Ultra Milds
- Classic Regular
- Classic Ice Burst

Most Preferred Variant

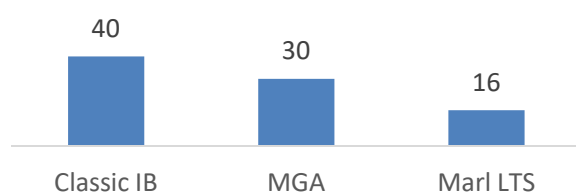


The top two most preferred variants are from the Marlboro family i.e. Marlboro Advance followed by Marlboro lights. It again throws light upon the fact that Marlboro is more preferred by the youth.

Which cigarette you started smoking with?

- Classic Ice Burst
- Marlboro Gold Advance
- Marlboro lights

First Offer

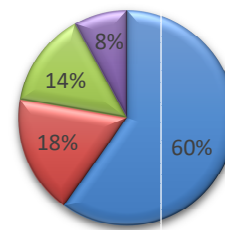


Classic IB comes out to be the most preferred first cigarette by the youth. Upon further research, it was found out that because of the light nature and menthol favor of this particular variant, it is the most preferred one to commence smoking with.

What influenced you to smoke this cigarette?

- Friends
- Mildness
- Filter Quality
- Taste

Influence of choosing a brand



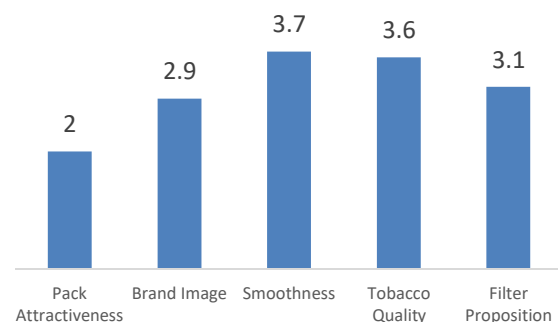
■ Friends ■ Mildness ■ Filter Quality ■ Taste

From this particular question, it has come out that most of the people smoke their first cigarette as suggested by their friends. Thus peer pressure is the foremost influencer to choose a brand followed by the various characteristics of a cigarette variant.

Rate the factors given below according to their influencing capability

Factor	1	2	3	4	5
Pack Attractiveness					
Brand Image					
Smoothness					
Tobacco Quality					
Filter Proposition					

Factors rated by smokers according to their influencing capability

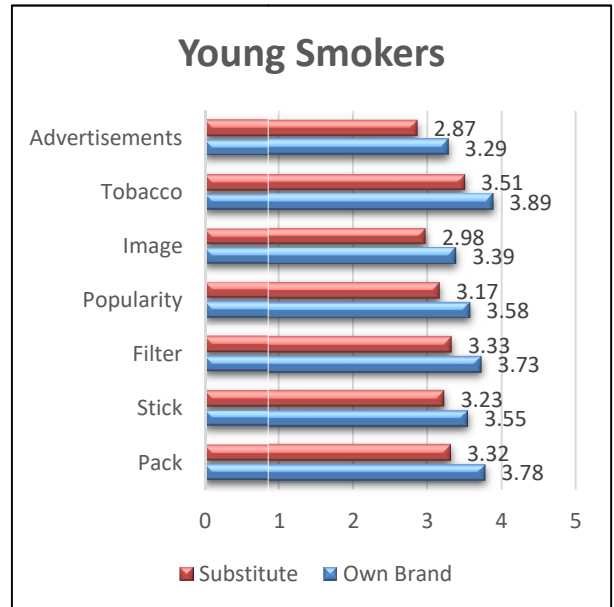
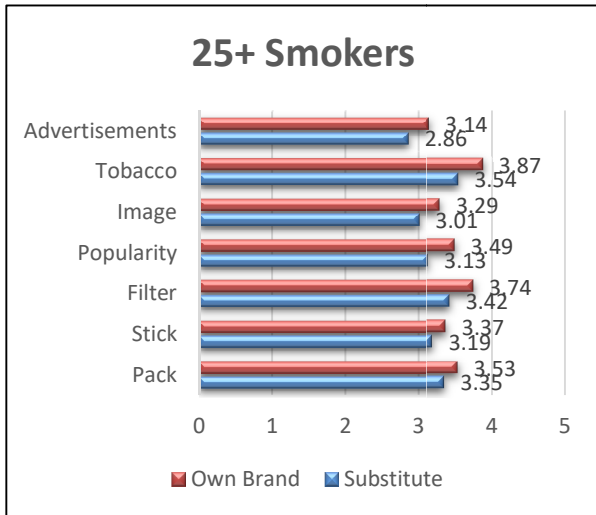


From the responses recorded for this question, it can be judged that smokers are more influenced by the characteristics of the cigarette they smoke like smoothness followed by tobacco quality and filter proposition. Other appealing factors like brand image and pack attractiveness find a lower place in the list.

Rate the factors of competitive brand that you smoke

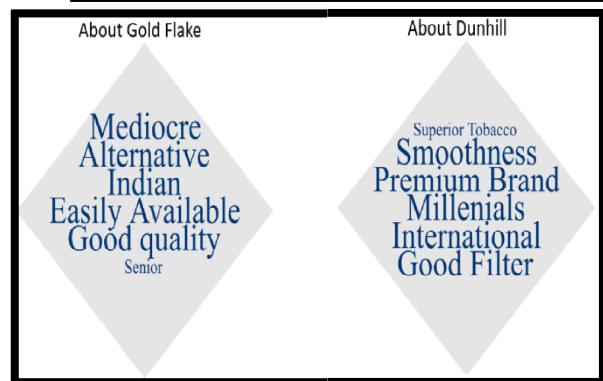
Factor	1	2	3	4	5
--------	---	---	---	---	---

Advertisements					
Tobacco					
Image					
Popularity					
Filter					
Stick					
Pack					



From this intensive study, it can be established that among young smokers as well as 25+ smokers, tobacco quality and stick proposition are factors that if changed by competitive brands are more likely to see a shift in consumers. Smokers are loyal towards their brand but they are very conscious about the tobacco quality that is being served and the stick proposition they consume.

What is your perception about Classic/Marlboro/Gold Flake/Dunhill?



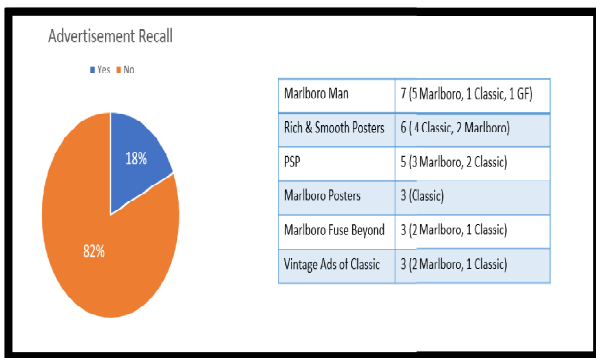
Classic is perceived to be an Indian brand that serves the smoothest cigarettes.

Marlboro is mostly taken as an international brand particularly serving the millennials.

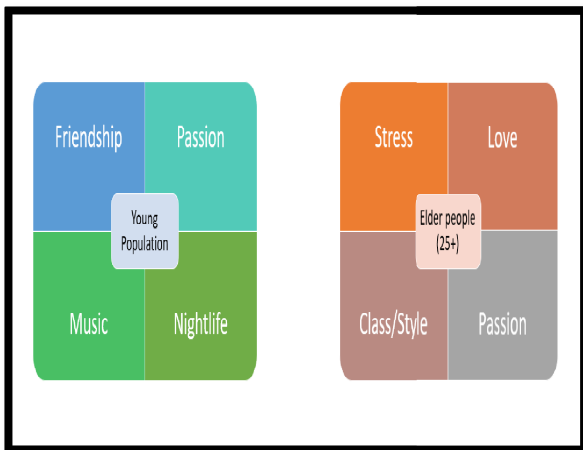
Gold Flake is taken as an easily available alternative and not a first choice.

Dunhill is perceived to be a premium foreign brand with special filters.

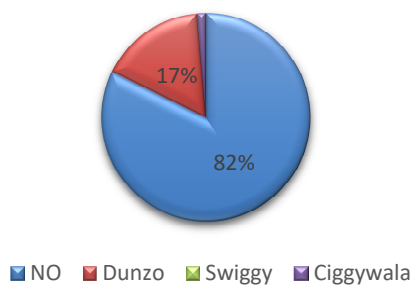
Do you remember seeing any kind of cigarette endorsement? If yes, then what comes top off your mind?



It can be inferred from here, that most of the smokers do not remember any of the advertisements by their favourite brands or other competitive brands. This can be owed to the fact that limited window is available to tobacco companies to advertise their produce. What kind of advertisements would you like to see for cigarettes?



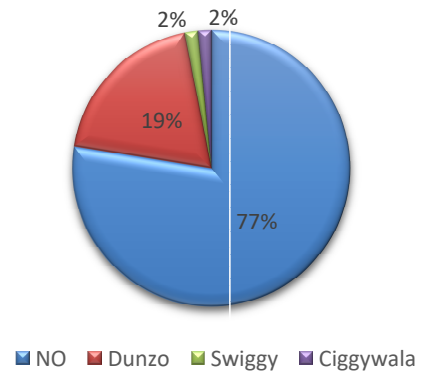
ONLINE ORDER (ASO 25)



On asking about the advertisement preferences, millennials came up with the idea to relate advertisements with music, nightlife, passion and friendship. Eldersmokers want to see tobacco advertisements about passion, class, love and stress relieving. It comes out that people like to relate the advertisements with most of the stuff going on their own lives

Do you ever order online?

ONLINE ORDER (ASU 25)

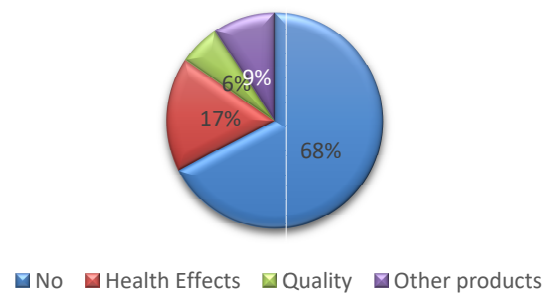


No major change was observed in the behavior of millennials and Gen Z about their knowledge of online cigarette ordering platforms. Though both the groups have slight knowledge about Dunzo, Swiggy and ciggywala as ordering platforms

What kind of information you look over internet about cigarettes?

- Health Effects
- Quality
- Different product offerings
- No

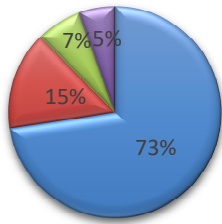
ONLINE RESEARCH (ASU 25)



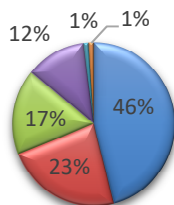
This inference is pretty much in line with the last one. Most of the participants from both the age groups are not very interested in researching about their smoke online. If ever done, they relate it to health effects, quality of their brand and other brands available.

What other cigarettes have you consumed and liked? (Substitutes of your fav brand)

■ No ■ Health Effects ■ Quality ■ Other Products



### Consumer Preferences



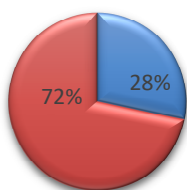
■ Ice Burst ■ Double Burst ■ Dunhill  
 ■ Fuse Beyond ■ One & Only ■ Grape Burst

Ice Burst variant by classic is the most preferred substitute by almost half of the survey responders. This might be related with the fact that Classic IB is the first cigarette that marks the smoking journey commencement for most of the smokers.

Do you like cigarettes with capsules/favors?

- Yes
- No

### Capsule Offers



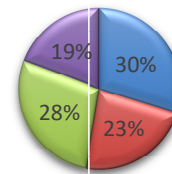
■ Yes ■ No

This study shows that most of the responders like their smoke to have a natural tobacco taste and thus do not prefer capsule offers with different favors.

What kind of capsule offers do you like?

- Menthol Capsule
- Two Menthol Capsules
- Menthol & Fruity Capsule
- Favored Pine

### Consumer Preferences



■ Menthol ■ Two Menthol  
 ■ Menthol & Fruity ■ Flavoured Pine

Those who like the capsule offerings are really attracted toward the menthol favor. Some like mix favors too.

### Discussion

Given that industry advertising is a significant counterpart to state anti-smoking advertising, it should be concluded that the industry would have increased advertising in the state after the passage of Proposition 99. However, as can be seen in Figure 1, which summarizes the behaviour of the state and Variables in business publications, at least in California's Life journal, cigarette advertisements in the market, followed a distinct pattern from That In the quarters leading up to the referendum on Proposition 99, those expenditures rose sharply. Shortly afterwards, however, Industrial media investment in the state declined at the end of 1988; indeed, with the exception of certain short-term investments, As the state media campaign picked up pace, differences in the charts, it would seem that advertising for business journals declined.

These product design amendments may have a significant influence on the design of the product. Impact on addiction and response to physiology. In Special tailored goods to meet individual requirements or desires Increased risk of dependency and increased initiation can lead to a higher risk Based on conditions of the targeted groups. One restraint This paper states that proof was not identified by the writers Sources who might determine whether or not this kind of stuff is Product creation focused on demands led to demand changes Cessation share or rates. Prospective research into the function of Such product interface upgrades for brand purchases, company sales, Levels of sharing and cessation are key. The degree to which the tobacco industry's needs-based

analysis has been used begs the question of whether comparable Marketing techniques occur in the cigarette and prescription drug markets.

The 86% lifetime retention figures of extremely loyal customers are realistic. Since this Data Collection there is no convenience store coverage, there is no good case as there is no good argument as if convenience store shopping, why does brand loyalty differ greatly if was included. It seems that dubious smokers will Usually, they purchase the brands they have affinity for in supermarkets and convenience stores, however, use a very different assessment matrix when buying in grocery shops, and are sure to carry an equivalent range of labels. The loyalty has seen downward trend by certain consumers might have been nullified, at least, raising their allegiance by either fresh newcomers or lower allegiance by standards, or through new consumers who are beginning to buy the brand. A concern relating to the frequency of the purchasing of cigarettes is if sales are in this category, what might be known as the minimum time-period cap is less likely to be used. This word highlights the fact that a lot of merchandise forms being purchased in discount shops usually re-buy in about a week's time (such as yogurt, chocolate, etc.). Ehrenberg, postulated cigarettes to be outside the purview of this general law. The percentage purchased once a week was 65 percent, 35 percent of the percentage purchased twice in either week 1 or 2. The effects of our research show important impacts on the inertia of brand prices, as well as on the price elasticity and demand for advertisements due to the ban of television and radio advertising. Without advertising in these mainstream publications to inform and differentiate, demand for goods becomes more price sensitive. It seems that as television and radio can no longer be used as message channels in favour of Nelson (1975), demand becomes more inelastic with respect to commercials. In line with this outcome, brand buying patterns are becoming more ingrained, as seen by the marginally higher X. Values after an ad ban, when individuals stop experimenting with unfamiliar products they have been introduced to and rely on ones they have previously been associated with instead.

Usually, there always are two kinds of smokers who prefer menthol: those who do not like the strong tobacco taste and discomfort experienced while smoking. For those preferring the special flavor of menthol and the associated feeling of cooling, nonmenthol cigarettes. This range of smokers comprise a huge number of some timers or youth, who are trying hard to minimize the inclination of new upcomers towards smoking, and resulting reliance on nicotine. Menthol smokers are looking for a lighter and smoother cigarette, less effect and throat itchiness, aftertaste of tobacco, blended with strength of mint, whereas now-a-days those who smoke menthol have much more tolerance power (Cantrell, 1987). In an effort to target new generation smokers wanting a smoother substance, cigarette producers might reduce quantity of menthol in certain offerings.

Marketing communications and risk assessment researchers had similar results. Types, in terms of smoking practices and publicity and promotion. In some cases, rather than contemplating it the client or potential buyer responds viscerally to the representations portrayed in cigarette advertisements and sales promotion. Slovik (2001) traces research and shows that when approaching smoking activity from a risk assessment point of view, people often make decisions quickly with or without a great deal of comprehension. The " heuristic effect " is seen as a reliance on those emotions (Slovik, 2001). Equally important, this paradigm dismisses the notion that cigarette smoking is a rational, ethical decision. Overall, demand is growing, feasible and extremely valuable for teenagers. Teens are conscious of luxury and prestige and expend a great deal of money on clothing and film (Fox, Krugman, Fletcher, & Fischer, 1998).

Tobacco producers have a long history of manufacturing introductory or 'starter' products. Consumers of existing smokeless tobacco have consistently regarded flavored smokeless tobacco products as for beginners' or a way to recruit younger men to embrace the drug (e.g. branding of Wintergreen refreshment). Research by the RJR focus group found that flavoured products were not popular with older or more experienced consumers, who discovered them to be for beginners.

In general, smokeless tobacco advertising has focused either on product characteristics or on generating the consumer's idea. Even though, even though. The main locations for the new cigarette promoted for smokeless tobacco advertising campaigns have moved from fishing competitions. The major advertisement attributes are similar: advertising and sponsorships for concerts, colourful packaging, and rodeos for urban bars and nightclubs. And complimentary presentations to promote training by prospective users and to "teach" people how to use the system, coupons or "buy one get one free" discount offers at the point of sale, and hire speakers to "educate" customers about the one-on-one product.

### **Conclusion**

From this complete study, it has been concluded that smoking behaviour is dependent on a lot of factors and influence of all these factors differs with respect to age, geography and economic situation of consumers. For these reasons, a no would be the solution to the problem of tobacco companies not responding to state advertisements and causing their demand to decrease. Next, other advertising activities, such as point-of-sale in the state, combined with direct advertising to smokers who send coupons directly to distributors for promotional purposes, may have offset the decreased magazine media budget. It is clear that such behind-the-scenes lobbying may be more cost-effective for tobacco companies than countering the state's anti-smoking media campaign by overt advertising, at least in a major publication. Products designed to address specific needs or desires may, within the targeted needs-based groups, contribute to higher risk of addiction and increased initiation. The acknowledgement by the public health community of the customized nature of cigarettes to personality types and their related tastes and expectations has implications for attempts to prevent tobacco. Previous cessation studies also recognized the value of identifying individual variations in emotional response, need and addiction to cigarettes in order to more efficiently identify the areas of cessation intervention. Given the significance of the interrelationship between physical characteristics of cigarettes and human

exposures, and that these exposures are mediated by smokers' attitudes and behaviours, more research is needed to evaluate how individual cigarette designs influence key exposure and health outcomes. Evidence suggests that the selective decrease of these mainstream smoke toxicants is accompanied by an increase in other levels of toxicants. The greater the degree of receptivity to persuasive communication, the greater the possibility of it influencing behaviour. The choice to use a promotional item is more effective in predicting success than having a favorite advertising, which is consistent with Ray's theory of how marketing works to generate consumer behaviour. Our national stake in claiming to be morally right and committed to the development of "health for all" is a greater awareness of the U.S. role in the spread of tobacco use in the Third World and the toll that our national values are likely to threaten. Fundamentally, in the name of free healing, the ideology of "market justice" puts responsibility for poor health in the hands of the consumer person. The audience does not appear to be invertebrate smokers for news products' ads and promotional behaviour; instead these commercials are likely to encourage new customers to try the products, and could lead smokers to postpone quitting who would have quit tobacco use. Cigarette advertising is associated with increased usage, especially among teenagers. Cigarette advertisements in the form of television advertising, in-store signage and displays, and event promotions are prevalent and continue to normalize smoking behaviour. In-store messages and displays not covered by the MSA continue to increase. Smoking is socially sanctioned by young smokers who are more vulnerable to the imagery than adults through cigarette ads and promotion advertisements. Tobacco industry research provides insight into the motivations and behaviours of menthol smokers through wide-ranging efforts, including focus groups, market research and studies of sensory perception-related smoking behaviour. The body of evidence obtained from these efforts suggests that there are distinctly different sensory needs and cigarette smoking methods for smokers who prefer menthol. Hence, it can be established that consumer demographics



strongly affect the smoking behaviour of individuals.

### Limitations

The complete research is based upon the literature survey of dependence of consumer behaviour on various different factors related to smoking namely filter ventilation, tobacco quality and content, packaging, advertisement and availability. Although the prioritization of factors can be done according to the responses but the exact degree of influence could not be gauged. Moreover, smoking patterns differ a lot from one region to the other region. Further the research available on this particular subject is pretty less and the degree of factors influence change drastically when distance between two regions increase. Consumer Behaviour is of utmost importance in industries riding so high on loyalty and the tobacco companies would be more interested in knowing the consumer behaviour and its dependency on various

factors. Proper dashboards should be made to evaluate different parameters on which the dependency of consumer behaviour might depend.

Additional factors like climate change, external stress, etc should also be taken into notice while coming up with the exact consumer behaviour. Designing a dashboard which accounts for all the factors that one can think of would cost a lot and yet you can not be sure of including all the factors. Cost benefit analysis should be performed for all these dashboards to evaluate the return on investment which can lead to closing of some projects.

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### References

1. Talhout, R., Richter, P. A., Stepanov, I., Watson, C. V., & Watson, C. H. (2018). Cigarette design features: effects on emission levels, user perception, and behavior. *Tobacco regulatory science*, 4(1), 592-604.
2. Pierce, J. P., Choi, W. S., Gilpin, E. A., Farkas, A. J., & Berry, C. C. (1998). Tobacco industry promotion of cigarettes and adolescent smoking. *Jama*, 279(7), 511-515.
3. Mejia, A. B., & Ling, P. M. (2010). Tobacco industry consumer research on smokeless tobacco users and product development. *American Journal of Public Health*, 100(1), 78-87.
4. Krugman, D. M., Quinn, W. H., Sung, Y., & Morrison, M. (2005). Understanding the role of cigarette promotion and youth smoking in a changing marketing environment. *Journal of health communication*, 10(3), 261-278.
5. Kreslake, J. M., Wayne, G. F., & Connolly, G. N. (2008). The menthol smoker: tobacco industry research on consumer sensory perception of menthol cigarettes and its role in smoking behavior. *Nicotine & Tobacco Research*, 10(4), 705-715.
6. Dawes, J. (2014). Cigarette brand loyalty and purchase patterns: an examination using US consumer panel data. *Journal of Business Research*, 67(9), 1933-1943.
7. Cook, B. L., Wayne, G. F., Keithly, L., & Connolly, G. (2003). One size does not fit all: how the tobacco industry has altered cigarette design to target consumer groups with specific psychological and psychosocial needs. *Addiction*, 98(11), 1547-1561.
8. Hu, T. W., Sung, H. Y., & Keeler, T. E. (1995). Reducing cigarette consumption in California: tobacco taxes vs an anti-smoking media campaign. *American journal of public health*, 85(9), 1218-1222.
9. Holak, S.L., & Reddy, S. K. (1986). Effects of a television and radio advertising ban: A study of the cigarette industry. *Journal of Marketing*, 50(4), 219-227.
10. Nichter, M., & Cartwright, E. (1991). Saving the children for the tobacco industry. *Medical Anthropology Quarterly*, 5(3), 236-256

## QUANTIFYING THE CONTINGENCY COST OF A PROJECT AND COST OF OPERATION.

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### ABSTRACT

*Project cost estimators have often struggled to identify the appropriate amount of contingency in the cost of project and cost of operations. Low levels of cost contingency may result in a situation of cost overrun and excessive contingency may lead to either avoiding the project or tying up funds that could be allocated to other projects. Therefore, it is essential to allocate the right amount of contingency on the basis of a systematic assessment of project risks. Research has shown that one of the main factors that contribute to eliminating project cost overruns is the correct cost estimation. Traditionally, contingency costs are allocated up to say 10% to 15% of the project cost. The percentages are based mostly on estimators' subjective assessments. Contingencies in the cost of operations are rarely included. The aim of this study is to evaluate the current practices of quantifying contingencies and sufficiency of methods suggested in various published researches and practicing professionals. This study examines existing practices of types, extent, rationales, and stages of including contingencies. This research used a questionnaire to understand the risk involved in project and a case study of construction project to understand and analyses to evaluate how the effectiveness of infrastructure projects contingency plan can be increased.*

**Keywords:** Contingency, Cost, Risks, Uncertainties

### Introduction

Intrinsically, infrastructure projects entail a number of complexities and threats at all levels. Such complexities may be classified as predictable, unknown and unforeseen. In order to mitigate such known (and unidentified) uncertainty / risks, Contingency reserve is a management device. In order to minimize the likelihood in overruns in project goals to the extent which is appropriate for organisation, the contingency reserve is "the sum of money, expenditure or time available above the forecast.". [1] In order to offset intangible losses related to impermissible adjustments in simple projections of expenditures, building partners including owners and contractors and planners incorporate a cost-saving fund.

It was always challenging for estimators to assign the correct amount of project contingencies to mitigate costs overcrowding, whereas at project closure reducing any unused contingency [2]. Comprehensive details, improved awareness, considerable experience as well as quality enhancement are required to achieve an reliable cost estimate [3]. The fixed allocation of uncertain funds contingency sums can be a cause of over running cost, if it is too small, when the allocation of funds for certain programs is too big [4]. A more comprehensive risk evaluation is therefore necessary if the

correct option is to be allocated. Research has shown that improvement in cost estimation techniques, including cost contingency estimates, is one of the principal factors contributing to the success of the projects [5]. Contingency is classified in terms of 'Contingency of Designer', Contingency of Owner' and Contingency of Contractor' During the production of the preconstruction work, the design contingency shall be included by the cost estimator in the preliminary budget. The owner's continuance is an extra expense towards programs and will lead to the owner's investment and contingency. Contingency of contractors is included in the project expenditure to prepare for unpredictable conditions which may occur during the construction period. An analysis to evaluate the projected costs / period effect estimates and comparatively large factors of uncertainties in expense contingency amounts are communicated to [6]. [7]. recently conducted research in 2019 and examined various contingencies such as cost and time contingencies, scope and quality tampon, the stock tampon and capability tampons. Nonetheless, recent literature relies on builders or construction contingencies.

In order to manage projects successfully, contingency is crucial because it provides a

buffer against risk development. The methodology of cost variance assignment is focused on the contribution of the tasks to the project's total expense difference, including quality, complexity and the essential road. In order to track the budget and allocation of risks and to determine potential requirements, the new Expense Contingency Management System incorporated additional steps. A real-life bridge maintenance project is supported by the new cost contingency management method. The conclusion indicates that the current technique of expense variance is flexible and robust enough to handle normal project disruptions.

A wide variety of experiments have been carried out around the world to measure construction risk with the help of different models. These models are:

1. Traditional Method, percentage of total cost of Project of ([8])
2. FREQ also called Factor Rating and Estimation method [9].
3. Monte Carlo Simulation Method (MCS) [10], [11] [12]
4. Regression Analysis Method (RA) [13][14], [15]
5. Individual Risk and Expected Value Method [16].
6. Influence Diagram Method ([17] [18])
7. ANN Model [19].
8. Fuzzy Sets Method [20] [21] [22] [23].
9. Method of Moments Method ([24] [25]; [26])
10. Range Estimating coping with Uncertainty Method [27]
11. Theory of Constraints Method [28].
12. PERT Method ([29] [26]).
13. Analytical Hierarchy Process Method [30]

The Risk Management literature recognizes the uncertainty in projects from all types of industry. The inability to forecast a project's final results with respect to time, expense, consumer satisfaction and technological performance can be described as uncertainty [31].

The current research done to work as an exploration to examine current practices of contingency provisions and to gather global

best practices. The need for the research is in the following context

1. There is no uniform practice in deciding quantum of contingencies in Cost of Project as well as in projected operational cashflows. There is a tendency to provide lesser contingency so as to make the project financially more attractive.
2. It needs to find out whether the contingencies were provided in the projects where contingencies were included in cost of projects sufficiently.
3. Contingencies will have to be different depending upon at what stage these are provided
4. Contingencies should be provided component-wise.
5. Contingencies should be on two purposes. Internal and External.

### Literature Review

The difficulty of programs provides the potential for time and costs to rise. To order to account for the price change and recovery from risk, contingency is a gain buffer. It was described by the research unit for Project Management Institute as: "The sum of financial resources, the budget, or the amount of time that is required above the estimate to reduce the risk of project overruns to a standard acceptable to the organization". [32] "An amount added to an estimate to allow for items, conditions, or events for which the state, occurrence, or effect is uncertain and that experience shows will likely result, in aggregate, in additional costs". [33]. Price volatility is normally measured by way of estimates or assessments on grounds of historical investments or expertise of programs. [34]The expense contingency of a project is designed to account for "estimated uncertainty dependent on expected or calculated amounts, unexpected business factors, timing delay and acceleration problems, bid competitiveness errors, sub-contractor defaults, and interfacing omissions between specific working groups." There are two methods to estimate the emergency cost for building projects. The methods according to [12] are classified as deterministic methods and probabilistic methods. The proposed method is a standard way to measure chance possibility for

construction projects. A certain portion of the contract amount or sub-component of the projects typically represents the risk variance in the deterministic process. During the early stages of contracts where there are more possible threats, the proportion of the possibility for a building project is comparatively small. In general, the deterministic method uses 5 to 10 percent of the contingency cost of the project.

Probabilistic risk contingency estimation process addresses the assignment of probability-distribution (PDF) components to the project cost, generating a PDF through summative process for the overall cost of project. The outcome of this phase is the breakdown of total project costs into parts. The PDF of each system explains the component's real values while the same project is carried out on multiple times. This therefore represents a cumulative number or cost of the overall project cost, indicated as the cost changes [12] could potentially be cut or increased in construction costs. The probabilistic framework for the estimation of risk variance involves the approach to estimated value (EV), Moment framework (MM), Monte Carlo simulation (MCS), etc. There are various methods. The estimated benefit method requires the appropriate recognition of all threats involved with a construction project. We also describe the effect on the project and its possibility. Consequently, these threats are known as contingent and defined threats, either entirely or not, and not the magnitude of the risks. The calculation of all threats is then based on the highest and average danger worth. In the case of the project [12]. There are cumulative typical probability levels. The Most Relevant Methodology is another move away from the predicted value method, as described by [26], by measuring the standard deviation of increasing risk alongside the average and maximum risk value. The central limit theorem thus serves for verifying that the cumulative expense of this project (i.e., a summation of the predicted values) meets normal distribution, and for deriving the contingency costs at a given trust point  $z$  values from a normal distribution likelihood table are used. Unlike the predicted value that expresses it as a numeric figure, final construction costs are

expressed in the current method as an ongoing distribution of probability. Monte Carlo Simulation (MCS) simulates a building project by approximately +1,000 simulations. Based on the parameters and the form of the likelihood distribution a chosen amount is assigned to each cost variable. The cost factor values of each test are summed to provide the costs of the project. The generation is then performed using different element values, all reported for project costs. Simulation from Monte Carlo is regarded as easy to use and readable. The identification of risks, challenges and opportunities is often addressed. Event money is used in the budgets for growth, and allows managers required strategies to cope with difficulties and gaps in mission goals threatened [17]. An average expense ratio dependent on past experience with related ventures may be calculated as a typical methodology [35]. The scheme would obtain contingency funds. [36] addressed the general contractor's literature deficit in handling risks in the building industry, especially in the use of time and expense contingencies. The construction firms evaluated 10 000 times and costs in the light of the risks to project progress, i.e., optimistic contingencies, rather than directly and universally, in a case study undertaken by two major construction companies of Spanish.

The relationship is based on the loss of confidence in the value of contracting crew members' resources and expenses at about the same period, the study explored contractor price incentives that could improve the likelihood of finishing the project, and also provide visibility into a form of contingency previously not discussed-negative contingency. The techniques for the estimation of variance are classified into three major classes. Such are deterministic method, normal mathematical methods probabilistic method and [37]. 'Traditional percentage, element categorization and price evaluation' are deterministic approaches. The simulation, regression process, moments, person threats, anticipated benefit, expected size, effect diagnosis, constraint theory, hierarchy analysis and PERT are used as compared to probabilistic approaches. On the other hand, modern methods like mathematical include ANN and

fluid-based samples. The following table1 and drawbacks of earlier studies done on the shows the research summary and limitations Cost Contingency.

TABLE I. Contingency In Earlier Studies.

Method	Reference	Summary and Limitations
Traditional Percentage Methodology	[8] [8]	<ul style="list-style-type: none"> <li>• The cost estimation of each cost variable, based on its most probable meaning, are deterministic point estimates of this system. In addition to the simple calculation, contingencies are also measured as a whole number, usually based upon judgment, prior knowledge and historical evidence.</li> <li>• Limitations - Unable to justify or defend subjective [35] It is a non-scientific and budgetary approach to projects. ( [38].</li> </ul>
FREQ Method	[9]	<ul style="list-style-type: none"> <li>• The contingency cost required is assumed in this study related on the clarity of the estimated ventures project costs and previous Project cost figures.</li> <li>• Limitations -The collection of the four accurate estimation determinants is severely ineffective. If the estimate is incorrect, it can contribute to high contingency [39]</li> </ul>
Monte Carlo Simulation	[10] [11] [12]	<ul style="list-style-type: none"> <li>• A systematic risk modelling approach and a standardized framework for assessing contingency interest in the cost estimation of a project.</li> <li>• The Monte Carlo Simulation method has been implemented in this analysis to determine both control of time and costs. The methodology enables risks contingencies to be allocated to multidisciplinary works / activities that quantify time and cost contingencies. Testing has provided appropriate findings for business and academics for potential use.</li> <li>• [12] have proposed a cost contingency reserve approach for ventures determined and monitored in this study. Earned Value management tracking system for CCR power. In a particular enterprise, they implemented their methodology. Simulations after reduction showed that CCR values constitute 2.88 percent of the project costs, but that incentives might save.</li> <li>• This research showed a probabilistic approach for estimation has been for the project cost contingency, considering that there can be any risk in terms of economic effects at a variety of levels. Qualitative analyses across three parameters: timeline, expense, and efficiency achieve the effect of risks on the project. A systematic stochastic analysis utilizing the Monte Carlo Method (MCM) was also conducted to assess how the contingency costs were allocated and the related risk level. The request was for a real company for two distributors who had the cost contingency of the project.</li> <li>• Limitation - In most situations the simulation is required since it appears to be challenging and impractical to use direct empirical methods [40]. This approach is complex, inefficient and seldom used in the building industry. [41]; [10].</li> </ul>
Regression analysis	[14] [13] [15]	<ul style="list-style-type: none"> <li>• In this study, the author stated that models of regression are an important numerical tool for evaluating and forecasting the contribution of variables to the overall precision of estimates.</li> <li>• The projected cost to real costs ratio of this analysis was the dependent variable whereas the degree of complexity and unproven technologies were the independent variables.</li> <li>• This research was intended to evaluate the perceived cost and schedular impact ratings and relative importance to costs contingency amounts of identified risk drivers. In the background of road transport programs, the previously established risk factors were measured using survey responses from experts. The step-by - step analysis of regression was used to explore the association between predicted expense contingency amounts in certain ventures and the perceived risk driver scores measured by project professionals. The analysis showed that insufficient design examination changed substantially the decision of the risk of the owner, while adjustments to the proposal from the owner affected the sum of both the client and the contractor.</li> <li>• Limitations -This process uses historical cost data, sometimes impossible for the collection of historical cost information and time consuming. [39].</li> </ul>
(MOM) Method of Moment	[24] [25] [26]	<ul style="list-style-type: none"> <li>• This research expresses a probability distribution in each cost item in an estimation, which represents the uncertainty within a cost item and is focused on its predicted value and variance. For all products, the expected values and differences are applied so that the benefit and the usual variance for the total budget of the project is met. Total project</li> </ul>

		<p>costs shall, if the costs articles are independent, follow the normal distribution. The contingency cost is then calculated on the basis of a specified precision from the probability distribution by using a normal distribution made from probability tables (z values)</p> <ul style="list-style-type: none"> <li>• Limitations- This is challenging to use and not appropriate for broad and complicated infrastructures. [39].</li> </ul>
Individual risk and expected value method	[16]	<ul style="list-style-type: none"> <li>• [16] found that the risk register identifies all significant risks. Risk registry is a list of uncertainty / opportunities and their impact on project cost / programming, which are the important result of the process of identifying risks. The threats can instead be quantified by calculating the possibility of hazards and danger effects. Every danger is determined for its expected value by multiplying its likelihood and effect. The analyses can be achieved without simulation because the results are always deterministic.</li> <li>• Limitations - The recognition of set and variable project variables is challenging and conventional [39].</li> </ul>
Range estimating	[27]	<ul style="list-style-type: none"> <li>• Cost factors that can significantly affect the project result are identified in this study and the variations are applied only to the key elements. The range of least, highest and most expected values assigned to each element of cost in the research is checked on the basis of its analysis of the risk. In addition, the analysis incorporates strong correlation between cost elements. A simulation software like Monte Carlo is then run that makes the risk of ranging arbitrarily from the highest to the lowest value.</li> <li>• Limitations - Adopts this approach probabilistic system that does fewer accuracy compared to methods of regression [39].</li> </ul>
Influence Diagram (ID)	[18]	<ul style="list-style-type: none"> <li>• Pearl J (2005) claimed in his research that ID portrayed the decisions of the judgment situation as a compact graphic and mathematical representation. He continued that a Bayesian network is a generalization which can model and solve problems with probabilistic inference as well as with decision-making.</li> <li>• Limitations - This approach is not realistic where there are high risks because the amount of consequences rapidly grows with the amount of risks</li> </ul>
Theory of Constraints (TOC)	[28]	<ul style="list-style-type: none"> <li>• The Leach LP's project planning and management approach was conceptually clear and realistic. He clarified that working on the project limit (the vital chain) helps in the performance of the essential project management chain, which is the objective of the whole project.</li> <li>• Limitations - This approach implies the expense objects are different and not valid in actual existence [39].</li> </ul>
(PERT) Program Evaluation and Review Technique Method	[29] [26]	<ul style="list-style-type: none"> <li>• A probabilistic PERT-like approach has been suggested in this analysis. This approach will change the association between the cost items of the project.</li> <li>• Limitations- This approach is considered as unreliable, since the final expense is believed to have a natural distribution, which is not so if the expense products are not separate and their interaction is checked [37].</li> <li>• This method presupposes an estimate of a three-point (optimist, very likely also pessimism) beta distribution of increasing object. Three of them criteria may be either quantitatively calculated by utilizing details for previous ventures or using professional information and expertise qualitatively</li> <li>• Limitations - The cost elements are assumed to be mutually separate [37].</li> </ul>
Analytical Hierarchy Process (AHP)	[30]	<ul style="list-style-type: none"> <li>• For this research, the AHP probability analysis was combined with the [25]model for contingency distribution. At work package stage, the risk factors were established and their results were assessed using the AHP. The possibility rates of job packages with a large, moderate and low risk were identified, which provided the conceptual foundation for the continuum of liability through the incorporation of the mechanism for job disturbances and organizations. The model used the base calculation of the expense of operations and the details for risk analysis as a device input. The estimation of base cost operations contributes to the study of the concept of the field that essentially defines positive and negative forecasts for increasing operation. An operation study and the central limit principle is used to calculate the potential costs of a job kit or even a chance estimate. The discrepancy between an equal opportunity calculation and an expense estimation is the variance. This ensures that the overall risk is 50 percent less probable than expected.</li> <li>• Limitations - Cannot use this approach to locate a true question solution or to achieve a definite answer [39].</li> </ul>

ANN	[19]  [20] [21]	<ul style="list-style-type: none"> <li>• For Oil and Gas ventures an ANN model has been established in this report. In order to be as consistent as possible in practice, the projects selected were carried out by a single organisation. To implement and develop the model a software package called Neuro Shell 2 has been used for commercial neural network development.</li> <li>• A concept for price risk creation with fuzzy sets was proposed in this report. Fuzzy Collection was used as a method to support contractors determine the tendering price for the project.</li> <li>• A risk management approach for subterranean building projects with fuzzy set theory was built in this report.</li> <li>• Limitations - The key factor affecting efficiency is that there are differences in the training results by ANN. Therefore, it is really important to pick the accuracy and inconsistent inputs as the training data [42]. A fuzzy model is challenging to create, needing further fine tuning, which in actual life has been challenging [39]</li> </ul>
Fuzzy set theory	[22]       [23]	<ul style="list-style-type: none"> <li>• In designing and implementing the theoretical system of contingency modelling, Salah A and Moselhi O (2015) used fluent set-theory to integrate uncertainties relevant to the building project growth processes. Such consistency of methodology was illustrated by the implementation of the existing system on an individual project case and its capacity to handle risk throughout the building projects' life cycle the methodology developed provided a system for contingency depletion using various consumption curves and electoral variables for project managers.</li> <li>• [23]presented a flawless logical model which enables clients to reliably and Predict project period and expense volatility in Egypt correctly. Input variables for the model have been identified as the major points affecting the time and contingency cot. These variables have been calculated and implemented by fuzzy rules for the time and expense variance, the production variables A fuzzy logic model has been developed to simplify the expected cycle with MS excel tools. The model findings were appropriate for time and expense volatility with an average validity percentage of 84 and 81% respectively.</li> <li>• Limitations - It is A fuzzy model is challenging to create, needing further fine tuning, which in actual life has been challenging [39].</li> </ul>

**Research Methodology**

Firstly, the earlier published research papers and generals from research paper websites were downloaded. With these papers a primary study was conducted with the help of earlier published about understanding the risk for which the contingency costs are involved through the cost of the Project and the cost of Operation. Then a secondary research was conducted followed by a case study to understand allocation of contingency cost. In this study, a research questionnaire was developed and shared with 70 Project Managers and Senior Engineers of different organizations and Estimating Firms for Government and Private Organisations and their response were recorded. The projects under them ranges from Airports, Highways Commercial and Residential Projects. These responses are tabulated and shown in the Table 2. The following table helped me to understand the ground reality about the risks involved in

the above said Projects for Quantifying the contingency costs. The data collected from the different Project Manages and Senior Engineers, working on different Infrastructure Projects were collected through google forms and online meetings and phone calls. The data collected was interpret on the excel sheet and the responses for the particular reasons were recorded with the help of Pivot Table. The responses recorded in the table helped to understand the major Contingency Risk involved which causes cost overrun in the cost of Project and operation cost of Project. The relation of these risks mentioned in the table with the contingency cost is shown in the case study below which was hits with risks like, Project Scope change, Inadequate reviews of plan by designers, poor engineering practise planning and coordination, delay of permits and unavailability of labour and materials like Sand.

TABLE II. Responses From The Questionnaire

<b>Risks involved in Project (Internal and External)</b>	<b>Responses Yes as reason for Cost Contingency</b>
Project scope	63
Project purpose is poorly defined	51
Inadequate reviews of plan by designers and contractors/design errors	56
Land acquisition delay	55
Changes owner's request, which includes unexpected external stakeholders' involvement, extra road/bridge capacity request, adding wetland mitigation, forcing contractors to work at night, and any other extra work	35
Changes to unforeseen site environment requirements, which includes unrealistic erosion control liability, equipment site requires extra environmental protection, traffic and lighting risk, permitting and restrictions to work flow, and environment and sit design consistency	48
Poor involvement of utility companies in planning stage	35
Poor coordination among utility agencies, designers, and contractors	35
Increased utility relocation costs	42
Poor engineering practice within the state	56
Inexperienced project manager and professionals	28
Design errors and omissions, which includes construction staging and plan design errors, poor foundation design, some design details, inaccurate quantities	62
Inadequate constructability reviews, which includes lack of a process for incorporating constructability reviews into the planning and design	59
Delay in quality assurance/quality control (QA/QC) services	49
Poor preliminary soil information and investigations	35
Unforeseen and/or differing geotechnical conditions	49
Unforeseen hazard conditions	41
Inaccurate structural design	42
Project construction management	49
Poor communication with owner and contractor	42
Delay of permits	69
Constraints in construction work window, which includes potential construction work constraints if archaeology sites are discovered during construction, set time frame, permits require specific sequences, and narrow workday window	42
Material availability and price inflation	67
Subcontractors errors and delays	68
Safety issue	42
Warranty issues	47



**Case Study**

To demonstrate the value of the planned expense contingency. The procedure is used for Construction of Real-life Education Building Project. The Project Considered in this paper was completed in 2016 and is an Educational Project in the State Maharashtra, India 016 of India. The Project includes G+3 Building and Site drainage work. The project lasted for 4 yrs. and was shut down for some time in between due to some uncertainties from contractor side.

**Detail of the Project**

Client: - Pune University  
 Project Start Date: - 2012  
 Project Completed Date: - 2016

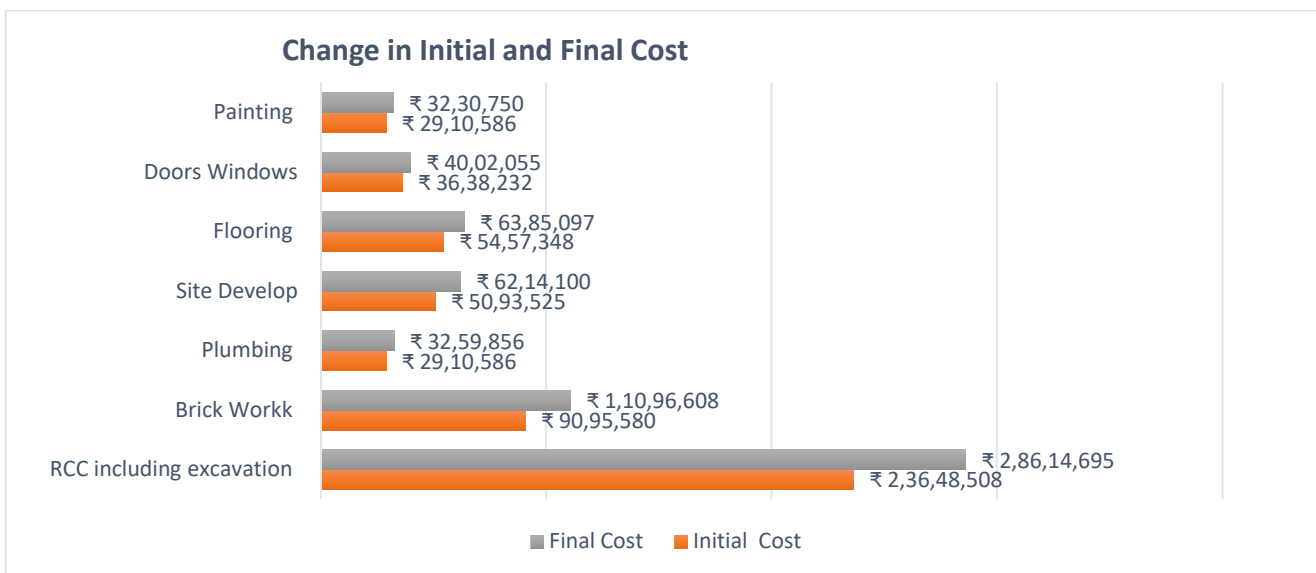
Initial Cost of the Project:- Rs 5,16,00,00  
 Final Cost of the Project:- Rs 6,28,00,000  
 Completion Time 18 months (initialTime)

**Reason for Delay**

- Change in Project Scope
- Poor Project Management Skills
- Architectural Changes, Inadequate reviews
- Uncertainties like Non availability of Materials like Sand
- Communication Gap between Contractors and Consultant
- Conflict of negotiation between Contractor and Client
- Lack of Use of Modern tools like MS Project Primavera and Revit.

TABLE III. Table 3 Showing The Change In Cost Of Project

Description	Initial Cost in Rs	Final Cost in Rs	Percentage Change	Factor change
RCC including excavation	23648508	28614695	121%	1.21
Brick Work	9095580	11096608	122%	1.22
Plumbing	2910586	3259856	112%	1.12
Site Develop	5093525	6214100	122%	1.22
Flooring	5457348	6385097	117%	1.17
Doors Windows	3638232	4002055	110%	1.10
Painting	2910586	3230750	111%	1.11
Total Cost	52754364	62803161	119%	1.19



**Fig. 1. Shows Changes In Initial And Final Cost Of The Project**

**Result and Analysis**

The estimated cost and actual cost of major construction activities at the end of the project

is shown in Table 3, which reflects that the major activities affected were RCC, brickwork and Site development during the construction phase. The changes were due to contingency

risk factors like change of scope from the client and poor project management activities, delay in permission, design errors and unavailability of raw materials. The project cost changes from Rs 52754364 to Rs 62803161, which shows contingency funds allocated for the project were Rs 1,00,48,797 with respect to all activities. Fig 1 showing the impact of activities on the finale Cost of the Project In this Projects, the allocation of contingency costs depends upon the impact of level of particular activity on the whole project. Here the Impact is more for RCC and Brick Work project on the whole project.

The RCC and Brick Work contributes on the total cost of the Project is more than 75.%. Thus, here the more emphases were on these two the reason for the increase in cost of RCC and Brickwork was due to risks like design change and scope change from Clients, Elevation change requirements and non-availability of resources and raw material and price change, delay in drawings. In this project the Total Contingency cost is Rs 1,00,48,000, which is 19 percent of the project against the Traditional 10 percent consideration. Here in this result shows the project was overrun.

TABLE IV. Contingency Cost Allocated To The Project

Description	Initial Cost in Rs	Final Cost in Rs	Contingency Cost allocation in Rs	Change in cost with respect to contingency cost allocated
RCC including excavation	23648508	28614695	49,66,187	49.5%
Brick Work	9095580	11096608	20,01,028	20%
Plumbing	2910586	3259856	3,49,270	3.5%
Site Develop	5093525	6214100	11,20,575	11%
Flooring	5457348	6385097	9,27,749	9%
Doors Windows	3638232	4002055	3,63,823	4%
Painting	2910586	3230750	3,20,164	3%
Total	52754364	62803161	1,00,48,797	100%

The change in cost of RCC with respect to the Contingency Cost is 49.5% followed by Brick work 20% and Site Development 11% as shown in table 4. Here the results also show that the majority of allocation of contingency funds were highest for RCC, Brickwork and Site Development work. The understanding from the about mentioned case and as per the earlier above-mentioned methods for the "Contingency Funds" remains the same that there is no proper method for quantifying the contingency cost of a project as the contingency risk remain uncertain during its construction and operation phase.

### Discussion

The case study was conducted to understand how the Contingency costs are allocated activity wise and what risk can be occurring during the construction and operation phase. Likewise, from the above-mentioned case study, in Infrastructure Projects, Quantifying and allocating contingency funds are necessary for the cost of Project and cost of operation the project. Operation cost of the project include fixed cost as well as variable cost. There

variable costs include daily operational cost and major risks involved with them can be unavailability of resources like labours, raw materials due to force measures like COVID-19 Pandemic. Also, many factors (risk) play in allocating the project cost contingency and rating of those factors should also be done. By giving rating to these risks and their effect, one can choose amount of contingency funds for particular activity. Modern software like MS Project, Primavera are very much help in tracking the record for bar chart schedule and thus controlling time and cost. Revit software helps in giving you instant updated Quantity. Despite them there are new cloud systems for collecting the information about previously done projects. By generating information from this cloud, one can get help in performing contingency risk allocation. Usually, the project managers calculate the expected expense of each operation on the basis of the expertise obtained from related previous ventures for cost risk calculation. The expense volatility for each activity is based on the contribution of the operation to the total project cost variation. Eventuality can have a major

effect on project results [30] [43], 2004) as it offers an anti-risk growth buffer. Too big an emergency may lead to poor management of expenditures, an undesirable project delivery and a lack of funding available for other organizational operations. An insufficient financing could lead, on the other hand, to an insufficient contingency.

An idea, an unrealistic financial system and unsatisfactory outcomes. Price contingency measures of performance track the amount or proportion of the contingency included in the Project Estimate [44]. It helps the project manager to understand how much flexibility a project requires. Contingency monitoring can determine specific contingency quantities according to project size and form, and the data recorded instead becomes helpful as related tasks occur for comparing historical data. It works also developed a novel approach for forecasting and managing risk flexibility throughout the preparation process, and for contingency management throughout the project execution period.

A project is known to be done by considering the financial aspect of the project and until the remaining risk is properly changed better than or equivalent to the current urgent revised Plan of the enterprise. Though many researches have done on the allocation of the contingency of funds to the Projects but the ground reality is that the Projects are getting delayed and the Project Managers don't know how to actually Quantify the contingency costs for Project work and Operational Work. Project ranging from large infrastructure projects have high uncertainty as compared to the small Construction Projects. So, for this Allocation of Contingency funds with respect to main activities, which have high influence on the Critical Path Method and contribute higher percentage cost of the Project. should be given high priority. These activities have large impact on time and cost of the Project and its Operational Work. The new software tools like MS Project, and Primavera have high range of tracking Projects with time to time and Updating them. Using through this software and updating them from time to time, and allocating contingency funds to according to Critical Path given by them to the particular project, will help a lot in Quantifying

Contingency Funds. Also tracking of Actual contingency funds allocated to estimated contingency funds with respect to the activities and project time line should be done.

### Conclusion and Recommendations

This research investigated the nature of risk volatility plan for the Educational Building. The expense volatility in the development process of certain project forms worldwide should be explored as a potential area of future study. The same work in other countries is often proposed. This allows us to gain insight into the evolution of the cost contingency during project execution, in various fields. This work logically explored potential explanations for adjustments in cost contingencies. Nonetheless, in the projects these explanations were not fully explored. As a next step, the current research could be expanded to software tools like MS Project and Primavera to information Cloud tools, from initial to project phases (construction) and compare the expected cost contingency and the real cost contingency after execution.

In short, this is what defines the desired approach Different from the process mentioned in the previous analysis. The approach suggested involves the risk estimation calculation, delivery and management. First, since it does not involve repetitive calculations or timely collecting of data (for example, questioning and inquiry) the proposed approach is simple to use. The project manager often does not need advanced expertise such Monte Carlo Simulation, M fuzzy logic, Method of Moment, Individual risk and expected value method, Range estimating, Program Evaluation and Review Technique, Theory of Constraints, Range estimating, Influence Diagram (ID) or any other method. The approach to handle expense volatility in particular on a building project will never be dynamic models. Everything

In the building business, technical or time-consuming approaches may provide no added benefit. Furthermore, the approach suggested serves as an early alert for budgetary operations. This encourages the operations to be precisely prepared based on present and historical budget patterns. Thirdly, the suggested solution is adequately applicable to

handle project disturbances. The project manager will choose the appropriate interval of trust. Despite the previous debate and the findings reached in this text, our current awareness regarding the control of risk contingency is that there is no single method for contingency management. The authors do not assert this to be the only way to estimate, assign or control resources for a project, nor do they claim that the proposed method led to the completion of the case study without using the whole contingency allocated for it. The proposed approach can be expanded for future work. Contingency schedule and real-life project testing. Another future objective is to combine the proposed method of cost contingency with a new schedule method for establishing a complete contingency estimate, allotment and management framework. Additional distributions should be investigated and their impact on contingency estimation and management closely observed.

### Limitations

As the uncertainty remains unknown and unpredicted risks and can range from high like current Coved Pandemic to small like design

error. In the above-mentioned methods in the literature review the tools used are not from construction background like regression analysis. They are from analytics background and rarely used by project managers and senior engineers. It is becoming hard for Organisations to consider how much contingency funds should be allocated to the particular project. So likewise, we don't know which activity will be affected more with uncertainty. Tools like Revit, Primavera and Cloud will help a lot in Contingency. Revit helps in giving you instant updated Quantity, Primavera helps for updating and cross-checking scheduling required for the project and Cloud which can give information regarding the previous same instant happened in past. Availability of tools also play a key role in tracking the project time line with cost expenditure as many of the Clients and Contractors do not use these tools because of their cost and inexperience of using these tools to track the schedule perfectly. Many organisations are yet to start using modern tools. These software will be the need of future projects for control cost and allocation of contingency funds.

### References

1. Hornstein, H. A. (2015). The integration of project management and organizational change management is now a necessity. *International journal of project management*, 33(2), 291-298.
2. Love, P.E., Sing, C.P., Carey, B., & Kim, J.T. (2015). Estimating construction contingency: Accommodating the potential for cost overruns in road construction projects. *Journal of Infrastructure Systems*, 21(2), 04014035.
3. Liang, R., & Chong, H.Y. (2019). A hybrid group decision model for green supplier selection: a case study of megaprojects. *Engineering, Construction and Architectural Management*.
4. Lhee, S. C., Issa, R. R., & Flood, I. (2009). Predicting owner's contingency for transportation construction projects using intelligent computing techniques. In *Computing in Civil Engineering (2009)* (pp. 442-451).
5. Uzzafer, M. (2013). A contingency estimation model for software projects. *International Journal of Project Management*, 31(7), 981-993.
6. Diab, M. F., Varma, A., & Panthi, K. (2017). Modeling the construction risk ratings to estimate the contingency in highway projects. *Journal of construction engineering and management*, 143(8), 04017041.
7. Ortiz, J. I., Pellicer, E., & Molenaar, K. R. (2019). Determining contingencies in the management of construction projects. *Project Management Journal*, 50(2), 226-242.
8. Mak, S., Wong, J., & Picken, D. (1998). The effect on contingency allowances of using risk analysis in capital cost estimating: a Hong Kong case

- study. *Construction Management & Economics*, 16(6), 615-619.
9. Oberlender, G.D., & Trost, S.M. (2001). Predicting accuracy of early cost estimates based on estimate quality. *Journal of construction engineering and management*, 127(3), 173-182.
  10. Clark, D.E. (2001). Monte Carlo analysis: ten years of experience. *Cost Engineering*, 43(6), 40.
  11. Traynor, B. A., & Mahmoodian, M. (2019). Time and cost contingency management using Monte Carlo simulation. *Australian Journal of Civil Engineering*, 17(1), 11-18.
  12. Eldosouky, I.A., Ibrahim, A.H., & Mohammed, H.E.D. (2014). Management of construction cost contingency covering upside and downside risks. *Alexandria Engineering Journal*, 53(4), 863-881.
  13. Merrow, E.W., & Yarossi, M.E. (1990). Assessing project cost and schedule risk. *AACE International Transactions*, H-6.
  14. Kim, G.H., An, S.H., & Kang, K.I. (2004). Comparison of construction cost estimating models based on regression analysis, neural networks, and case-based reasoning. *Building and environment*, 39(10), 1235-1242.
  15. Diab, M. F., Varma, A., & Panthi, K. (2017). Modeling the construction risk ratings to estimate the contingency in highway projects. *Journal of construction engineering and management*, 143(8), 04017041.
  16. Touran, A. (2006). Owners risk reduction techniques using a CM. *Construction Management Association of America*, 1-55.
  17. Diekmann, J. E., & Featherman, W. D. (1998). Assessing cost uncertainty: lessons from environmental restoration projects. *Journal of construction engineering and management*, 124(6), 445-451.
  18. Pearl, J. (2005). Influence diagrams—Historical and personal perspectives. *Decision Analysis*, 2(4), 232-234.
  19. Chen, D., & Hartman, F. T. (2000). A neural network approach to risk assessment and contingency allocation. *AACE International Transactions*, RI7A.
  20. Paek, J. H., Lee, Y. W., & Ock, J. H. (1993). Pricing construction risk: fuzzy set application. *Journal of construction engineering and management*, 119(4), 743-756.
  21. Choi, H. H., Cho, H. N., & Seo, J. W. (2004). Risk assessment methodology for underground construction projects. *Journal of construction Engineering and management*, 130(2), 258-272.
  22. Salah, A., & Moselhi, O. (2015). Contingency modelling for construction projects using fuzzy-set theory. *Engineering, Construction and Architectural Management*.
  23. Nawar, S. E. D. (2017). Owner time and cost contingency estimation for building construction projects in Egypt.
  24. Diekmann, J. E. (1983). Probabilistic estimating: mathematics and applications. *Journal of Construction Engineering and Management*, 109(3), 297-308.
  25. Yeo, K. T. (1990). Risks, classification of estimates, and contingency management. *Journal of Management in Engineering*, 6(4), 458-470.
  26. Moselhi O., Risk assessment and contingency estimating, Morgantown: advancement of cost Engineering (AACE), 1997.
  27. Curran, M. W. (1976). Range estimating: coping with uncertainty. *AACE Transactions, AACE International, Morgantown, WV, USA*.
  28. Leach, L. P. (1999). Critical chain project management improves project performance. *Project Management Journal*, 30(2), 39-51.
  29. Skitmore, M., & Ng, S. T. (2002). Analytical and approximate variance of total project cost. *Journal of*

- construction engineering and management*, 128(5), 456-460.
30. Dey, P., Tabucanon, M. T., & Ogunlana, S. O. (1994). Planning for project control through risk analysis: a petroleum pipeline-laying project. *International journal of project management*, 12(1), 23-33.
  31. Böhle, F., Heidling, E., & Schoper, Y. (2016). A new orientation to deal with uncertainty in projects. *International Journal of Project Management*, 34(7), 1384-1392.
  32. Shafer, S.L. (2000). AACE International's risk management dictionary. *Cost Engineering*, 42(4), 28.
  33. Clark, D., Sastry, K., Kim, B. Y., Holmes, S., Allman, W. D., Tong, K., ... & Sapp, D. RISK-3479 Variability in Accuracy Ranges: A Case Study in the US and Canadian Power Industry.
  34. Maronati, G., & Petrovic, B. (2019). Estimating cost uncertainties in nuclear power plant construction through Monte Carlo sampled correlated random variables. *Progress in Nuclear Energy*, 111, 211-222.
  35. Thompson, P.A., & Perry, J.G. (Eds.). (1992). *Engineering construction risks: A guide to project risk analysis and assessment implications for project clients and project managers*. Thomas Telford.
  36. Ortiz-González, J. I., Pellicer, E., & Molenaar, K. R. (2018). Management of time and cost contingencies in construction projects: a contractor perspective. *Journal of Civil Engineering and Management*, 24(3), 254-264.
  37. Bakhshi, P., & Touran, A. (2014). An overview of budget contingency calculation methods in construction industry. *Procedia Engineering*, 85, 52-60.
  38. Jugdev, K. (2000). Don't park your brain outside: A practical guide to improving shareholder value with SMART project management.
  39. Hamid, R. A., & Kehinde, F. J. (2017). Choosing an appropriate contingency sum estimating methods for highway construction projects in nigeria: a literature review. *PLANNING MALAYSIA*, 15(1).
  40. Touran, A. (1993). Probabilistic cost estimating with subjective correlations. *Journal of Construction Engineering and Management*, 119(1), 58-71.
  41. Lorance, R. B., & Wendling, R. V. (1999). Techniques for developing cost risk analysis models. *AACE International Transactions*, K21.
  42. Touran, A., & Lopez, R. (2006). Modeling cost escalation in large infrastructure projects. *Journal of construction engineering and management*, 132(8), 853-860.
  43. Venkata Pavan, M., Karnan, B., & Latchoumi, T. P. (2021). PLA-Cu reinforced composite filament: Preparation and flexural property printed at different machining conditions. *Advanced Composite Materials*, <https://doi.org/10.1080/09243046.2021.1918608>.
  44. Harper, C. M., Molenaar, K. R., Anderson, S., & Schexnayder, C. (2014). Synthesis of performance measures for highway cost estimating. *Journal of Management in Engineering*, 30(3), 04014005.
  45. Lhee, S.C., Issa, R.R., & Flood, I. (2012). Prediction of financial contingency for asphalt resurfacing projects using artificial neural networks. *Journal of Construction Engineering and Management*, 138(1), 22-30.

## CAN EMOTIONAL APPEAL TRIGGER PURCHASE? A STUDY IN THE BEAUTY INDUSTRY

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### ABSTRACT

*With the emergence of the printing press in the mid-1400s and television in 1800, advertising has gone through numerous milestones. From advertising on radios, televisions and billboards using facts and numbers, we have reached an era where brands are using emotions of the consumers to appeal to them. While making any decision, these emotions create preferences and trigger purchase based on the brand recall. Beauty industry today is booming with increasing demand and competition. Brands in this industry are extensively using emotions to create top-of-the-mind awareness about their brand in order to stimulate purchase. This paper attempts to understand the impact of emotions in buying decisions and how brands in the beauty industry are using this to influence them. It also elaborates on the factors that affect buying behaviour based on secondary research and how can these be used to connect with the consumers. The paper also highlights few success stories of beauty brands across India which has successfully used this strategy.*

**Keywords:** brand recall, emotional appeal, positioning

### Introduction

Today's customers are educated and ready to analyse what they don't understand. A more informed buyer tends to look at all the pros and cons before making a purchase. They also have a huge variety of choices offered by different brands at their disposal. And they're additionally flooded with commercials on a regular basis.

In this kind of busy and highly competitive market, how can companies ensure that their brand and their product stands differentiated? One way is by tapping into some other important aspect of the buyer's interest and purchase decision — emotion.

There is a science when developing the right type of marketing campaign. It takes a keen information of who a brand's target market is, and what emotion is fine to elicit for a response. It could be anger, sadness, disappointment, happiness and many more.

Consumers need to feel emotionally related to the brands they pick out for themselves because it's an extension in their personality, style, and identity. And loyalty grows once a strong emotional link to a brand is identified to which they can relate.

Emotions are always considered as an experience which consists of the consequent means: emotional feelings, behavioural actions, significant responses, physiological results, and subjective reactions [1]. Each advertisement

generates an emotional reaction, because the entirety we come across in existence generates an instinctive emotional response to everything and in this manner, emotion is more important than most advertisers recognise. How we respond to stimulus is rooted in our past experiences. This is actually true for all of the other occasions in our lives. Events that are familiar and unthreatening generate little attention. Those which might be exciting and fulfilling generate extra interest and appeal to us, whilst events which we recognize as painful or fearful repel us. When we come upon something completely new, our brain's first reaction is to relate it to something acquainted.

Rational thoughts make the customers interested in our product but emotions is what appeals to them. Rational Marketing focuses on the product specifications and attributes whereas Emotional Marketing is more about how they feel about the product i.e what is their perception of the product. These emotions experienced by the buyer creates recall in the mind of the buyer which triggers purchase at the time of decision making.

Brand Recall is very high with increasing involvement at the consumer level. Positive emotional appeal generate more the interest in the advertisement and manage to improve brand recall. And negative emotions invoke excitement for product category and induces to make purchase. [2]

### Literature Review

Many researchers have intensified the focus of their studies on emotional marketing and emotional intelligence [3].

In this aggressive and competitive environment where there are countless brands which provide comparable products and service which are good in quality and performance, consumers would prefer brands that attract their emotions. Fashion through its nature is an emotional product that requires to fulfil the needs and wishes of its users. Therefore, its vital for brands to make use of emotional branding strategies in order to reach their target audience with communication that speak to their hearts [4].

Emotions can be used to influence consumers to buy the product or brand when they find their own self in emotional stages that they wish to change. The use of these emotions especially in a reinforcement paradigm, grouped with the common concepts of direct and vicarious instigation of the major emotions provides several new opportunities which are available to the advertiser [5].

Advertisers make use of innovative strategies, for instance, incorporating feelings into commercials so that it will play on consumers' heartstrings with the aim of influencing their selection-making. Every client has distinctive preference criteria for advertised products (a term used to deal with both services and products). Consumers compare merchandise with their unique desire and interest standards which can also consist of perceptions about the goods and one of a kind appeal drivers, this is, the product's traits: how the product sounds, looks, feels, etc [6].

One of the questions to think of while analysing the ethical aspects around advertising is the use of fear and threat appeals to popularize a certain product or concept, etc., or to increase the sales [7].

This study suggests that in order to have a significant brand recognition and brand awareness, marketing and advertising managers of the companies should pay good attention and focus on the aspect of emotional marketing. The factors like types of media, meaning and form, cultural symbols does not directly affect the buyers' purchase decision, but indirectly affects purchase decision through

the perceived quality of product, brand recognition and brand awareness, respectively [1].

Companies which are engrossed in keeping their brand or product alive in the competitive market and eventually increase their market share, use emotional marketing. Customers these days are very loyal to their brands and are emotionally connected with it. [8]

It is also found that for utilitarian products, cognitive or rational appeals play an extremely affecting role in advertising. Advertising using emotions can be used heavily on products or brands which are based on services. Positive emotions and feelings like cheerfulness, anticipation, happiness, interest, surprise, etc are always associated with higher recognition leading to brand recall. It is also observed that the advertisements which are based on humour have a higher recall in the viewers and have the ability to create stronger advert-evoked emotions. In contrast, for advertisements which arouse warmth, the degree of advert-evoked feelings does not influence purchase decision or brand recognition [9].

### Objectives

The research done is exploratory theoretical in nature using secondary resources to understand and fulfil the following objectives:

- Identify major factors affecting buying behaviour
- Understand the role of emotions in purchase
- Analyse how beauty industry can use emotional marketing

### Research Methodology

The presented research paper is based on secondary research using sources like research papers, journal articles, opinions, blogs and website articles. The methodology involves understanding the impact of emotional advertising on purchase behaviour based on primary research done by various authors in different parts of the world. Understand how different types of emotions can influence the minds of the consumers. Since the paper aims to understand how emotions can affect brand recognition, brand loyalty, brand recall and eventually affect purchase decision, hypothesis based on these were designed. 8 types of



emotions are explained with examples which helps to understand how these emotions can be used for specific goals. In order to understand the purchase behaviour, it is imperative to understand the consumer behaviour and the factors which affect their buying behaviour. Thus 4 major factors which affect purchase decision is explained. And beauty industry being an industry where the consumers are highly loyal, the significance of emotions is explained. To give weight to the entire study, 5 case studies of 5 brands in the beauty industry which have successfully used emotional advertising are showcased.

### Formulation Of Research Hypothesis

The paper aims to understand how in the beauty industry, emotions are used to positively affect purchase decision. Emotions evoke feelings that may lead to better brand recall, recognition and ultimately influence the buying behaviour. Thus, this research hypothesizes that:

H1 - Emotional Advertising aids to increase consumers brand recall and brand recognition.

H2 - Emotional marketing can influence consumers perception of the product.

H3 - Emotional marketing can positively influence consumers purchase decision.

### Types Of Emotions And Their Significance

As human beings, we undergo hundreds of emotions every day – each emotion is specific to the situation that we find ourselves in. Based on a research, we're really only capable to feel four "basic" emotions: Happy, Sad, Afraid, and Anger. But most likely the "mother sauces" of cooking can allow you to make almost any sort of food under the sun, in the same way, these four "mother emotions" when mixed together in our brains, create our emotional stews. [8]

According to psychologist Robert Plutchik, there are 8 basic emotions: happiness, trust, fear, surprise, sadness, anticipation, anger, and disgust. These eight emotions are the foundation of all the other emotions.

Top 8 Emotions	
1. Happiness	5. Sadness
2. Trust	6. Anticipation
3. Fear	7. Anger
4. Surprise	8. Disgust

Figure 1: 8 Basic Emotions

Depending on the product, industry and the audience, the emotions which can be used to affect their buying behaviour will vary. For each product that is to be sold, it is important to dig deeper, understand which emotion can be used to elicit the right feeling that the buyer will connect to. Thus, for each emotion, what feeling can be elicited is given as follows:

#### 1. Happiness:

The feeling of happiness incites a person to develop feeling of sharing. If the person is happy and full of joy, they tend to share their happiness with the people around them leading to brand awareness. This is the most commonly used emotion on social media where brands use happiness to make their advertisement viral on the social media. Based on the fact that brands can evoke happiness, brands that can make their customers happy gain a competitive advantage in the market that may lead to brand preference, brand loyalty, and eventually in brand equity [10]. Coke came up with an impressive campaign which helps to keep the brand always in the top of the list of creating a positive sentiment around the brand. Recently the tag line of "Share a coke" and "Share Happiness", depicts how sharing a bottle of coke leads to sharing happiness.

#### 2. Trust:

Trust is one of the most important and effective emotion which affects decision making. Trust creates a sense of reliability for the brand in the eyes of the viewer. Its important for the consumers to trust the brand that they use. Products like baby care, personal care, medicine, insurance companies, etc require to build trust in their customers. Displaying openness and transparency, showing real life people, showing previous accomplishments, testimonials, etc are ways to build trust. Dettol is one of the best examples of Trust as an emotion. The brand logo has a sword and shield on the pack, which in turn emphasizes the

fighting to kill the germs and stops infection. The advertising creates a thought that it is safe and secure to use and assures the well-being of the entire family. The brand value of Dettol is also emphasized by “Be 100% Sure” [11].

### 3. Fear:

Fear is a great emotion to make human beings loyal to a brand or a product. Fear makes people check out some areas cautiously and make them feel the dangers of losing something if they don't take appropriate measures. Eliciting fear lets your product to be seen as a saviour in the dark world, which makes your consumers lean on you greater when matters take a flip and they need a solution to a particular problem. For example, an ad convincing people to shop for anti-virus software may convince more buyers, as they are continuously using the web, and are generally afraid of online theft, viruses, and security. The easiest approach for overcoming this fear is easy to acquire via actually buying the anti-virus software program.

### 4. Surprise:

Surprise or amazement is an emotion felt when the viewers are left in awe. It leaves the viewer awe-struck and makes the person think. It leaves a huge impression in the mind of the viewer and tend to leave a mark for a very long time since the viewer is taken aback by surprise, which leads to brand recall. Advertising with social messages are usually ones where such emotions are used.

### 5. Sadness:

Using emotions like sadness allows you to feel empathy or compassion. A lot of brands have observed the effectiveness of using emotional content that creates public cognizance of social issues like violence, gender equality, poverty reduction, immigration, and others. According to a study, feelings of empathy cause altruism and the incentive to act on behalf of others. It's no marvel that businesses like the ASPCA showcase unhappy snap shots and a sad story whilst soliciting for donations. Feelings of sadness inspire us to empathize with people leading to monetary donation [12]. It is important to keep the stability when developing such kind of commercials. You don't want to disillusioned your target audience and evoke

poor feelings made with the aid of your emblem.

### 6. Anticipation:

The emotion of Anticipation is very well recognized by brands who want to portray that their viewers lack a particular characteristic in their lives and with the help of their product, they can achieve it. They try to lead the viewer to the need recognition stage where they realise the importance of the product or in case of non-existent need, they create need by such appeals of how the product will help them. Beauty industry uses this emotion to their fullest. Fair and Lovely being the best example, where they try to persuade the women who are dusky to use their product to get fairer skin. They portray fair skin as a need for better life and the viewer in anticipation of looking more beautiful and fairer, gets attracted to the product.

### 7. Anger:

In the same manner as happiness, anger leads to strong emotions where viewers want others to feel the same thing as well. It thus leads to greater views and viral content [13]. Using anger in commercials makes humans annoyed and frustrated about such things as politics, environmental troubles, political issues, and so forth. Anger conjures up a negative emotion which is etched in their memories and it solicits action.

### 8. Disgust:

Disgust more or less plays the role of a catalyst for the emotion of fear. It tends to generate guilt which causes the viewer to think of the message that the ad is trying to portray. It is also an emotion which the viewer cannot forget very easily and clings to their thoughts for some time [14]. Advertisements of insect repellents showing insects disgusts the viewer. Other example includes ads about smoking where images which might not be aesthetically good are shown to convey the hazards of smoking.

## Factors Affecting Buying Decisions

### 1. Economics:

This one is the main factors of any purchase decision. The reason is straightforward -human beings can't purchase what they can't afford [15]. The need of the product also doesn't play a role here, but the most critical element is affordability. It is important for the customers

to purchase those products which are low-budget and it fits in their budget. Just take a look at the advertising and marketing campaign of Fair and Lovely. They're really banking at the logic of the society that the conventional Indian household need their daughters/daughters-in-law to be beautiful and fair. And what more does a buyer need if those set of notions are shown in an ad and moreover, providing the same at an affordable cost!

#### 2. Function:

This factor checks whether the product fulfils the need of the buyer. And a satisfied buyer will always be happy with the product. Thus, consumers are more interested in those products that can eventually provide them joy and pleasure after possessing it. For example Raymond's suiting of their enchantment shows that owners experience pride at the same time, pleasure of dressing themselves with Raymond suiting.

#### 3. Security:

Customers want to buy such products which are safe to use and do not cause any harm to them by any means. They question the reliability of the product while making the decision. Products in the banking sector or personal care, etc need to arouse a sense of security in their customers for brand loyalty. Thus, marketers end up appealing to the buyers through fear in their messages.

#### 4. Psychological:

Purchase decision includes motivation (Maslow's Hierarchy of Needs), perception, learning, beliefs and attitudes. Motivation is an important driving force in decision making. It is the next stage of need realization. When the need becomes pressing enough, leading the customer to buy the product. How the buyer perceives the product and its function, will also play a role in making the purchase. Some customers have preconceived notions and attitudes about a brand or a product. Such beliefs and attitudes make up a brand image which affect consumer behaviour [16]. Learning refers to making observations based on experiences and good experience with a particular brand enables brand loyalty. Thus, based on the type of product being sold and the nature and attitude of the target audience, the correct emotion should be identified which

makes the product appear as a solution to their need.

Marketers add emotions to draw their potential buyers. For making a purchase and choosing a product, there is always some emotion involved [8]. Emotion act as the fuel in the process of buying decision. Customers continually use logic at the back of each and every purchase and try to show that they have made rational decision and emotion has not performed any significant role, but the underlying force is the emotion that has played principal function in final selection. Rationality is very important however it simply generates interest in product, it is the emotion which in the long run leads the buyer to make the purchase. Customers are curious about attributes of the product but they also want to understand how that product fits their character. Customers makes the purchases of the products emotionally and later rationalize their preference.

### **Understanding Consumers In The Beauty Industry**

The Beauty Business in India is developing in terms of new product development, improvement and marketing. The desire of Indian consumers is moving from the 'merely purposeful' merchandise to greater 'advanced and specialised' beauty products. The entry of many MNCs into the Indian cosmetics market from 2011 has made it a really difficult and competitive marketplace [17]. These players have focused extra on product innovation; re-positioning and brand extensions which are spread across a couple of price factors, and greater product penetration through extending their distribution networks have worked greatly for them. The main players have also streamlined their spend on advertisements to balance savings that has enabled them to reorganize their pricing techniques in addition to provide attractive offers to increase their consumer base.

With expanding social organization and growing earning, beauty consciousness among the women has been changing. Cosmetics have entered into the lives of the women on an everyday basis. In fact, the act of enhancing physical look turns into a distinct manner to express one's personality however also a pattern for means of recognition is identified

[18]. Women have an inherent love for beauty. The rapid economic growth, with the ever-increasing improvement in the cosmetics industry in India, contributes to the sizable changes in cosmetics consumer behaviour. Cosmetics have grown to have become a part of daily routine to make ladies more presentable and be more confident of their looks. Understanding behaviour of customers is a key to the fulfilment of the business. As a massive potential target group, a deep understanding in their attitudes and shopping behaviour while purchasing cosmetics appears to be necessary.

Women today spends a heavy amount on their cosmetics products. Smooth and impeccable skin, smooth and shiny hair, long eyelashes, carved cheek bones, etc are the features that the women of today dream to have. Many of these expectations were actually non-existent a century ago. Thanks to the modern advertisers, today these expectations of feminine beauty were shaped as a necessity. Physical appearance is important in a women's life since it can be linked with better relationships, being more attractive, become more popular, socially acceptable and improve career prospects [19]. Thus, the tendency for body comparison and beauty standards are triggers which leads to purchase. Findings from many researches indicate that being attractive offers the world measures for benchmarking fitness, proper genes, success, intelligence, and popularity [19]. Being bodily attractive is largely taken into consideration as a strong asset and, as a consequence, the general public desires to appear beautiful. Additionally, society frequently highlights the appropriate beauty portrayed in commercials, which suggests that it attracts interest due to its association with reputation, achievement, and intelligence.

### Case Studies

#### *A. Case Study – 1 : Dove Real Beauty Sketches*

Dove's Real Beauty Sketches has a powerful message: "Women are usually their own worst critics", but to state the obvious, at the end of the day, they are trying to sell something, although it's worth noting that throughout the 3 minute video, no mention of the brand or the product name is done until the last few seconds

when the Brand name Dove is flashed on the screen. The Dove Real Beauty Sketches marketing campaign successfully struck an emotional chord with hundreds of thousands of ladies who recognize themselves as the worst beauty critic of their own self. Dove is devoted to a world where beauty is a strong source of self-assurance and the ad reinforces the dedication of the brand to foster confidence and self-esteem in young women.

In the Dove Real Beauty Sketches Campaign, they are trying to make the viewers understand the way females depict their own self-image is very different from how other women feel about them when they see them. Over 54% of girls in various countries agree that with regards to how their appearance is, they are their own beauty critic, which amounts to an outstanding 672.5 million girls across the world [20]. In response, Dove performed an intriguing social test to demonstrate the existence of this problem.

The Real Beauty Sketches ad shows a forensic artist trained by the FBI who has made over 3000 sketches all through his 28-yr profession. The movie documented the artist making sketches of seven women who were initially shown hidden at the back of a grey curtain and based on what these women describe, he used their own descriptions as the premise of his drawings or sketches. Before their session of sketches with the forensic artist, each of these women had been unexpectedly requested to spend a brief time frame with a stranger women without being instructed the reason for doing so. The artist then drafted sketches using the cues by the stranger's depictions. It was observed that, most of the sketches drafted from the stranger's point of view turned out to be a more stunning, happier and more similar portrayal of the women. Thus this shows that, when it comes to the appearance of women, the most pressure is the stress they put on themselves by these women. This isn't something new, various studies have shown that women tend to underestimate themselves about various things [21].

The movie thus documents and portrays the women's understanding and response to their self-portrait and the realization of their low self-esteem and how it is affecting various different elements in their lives. It evokes the

women and viewers both, to reconsider how they perceive their own selves. According to Dove, when strong women look, believe and acknowledge their true self, they feel happier. Through its Real Beauty Sketches campaign, Dove is sending a message to the society and, at the same time, fulfilling their need to sell products, carve out a huge niche segment in the market for their brand, and attract users [22]. Thus using emotions, Dove has very successfully attracted consumers to create positive brand recall in the eyes of its users.

### **B. Case Study – 2 : Dabur Vatika**

Dabur Vatika which is a haircare brand has taken a brave and unique approach for its recent advertisement movie. It is titled 'Brave and Beautiful' and the ad marketing campaign salutes women, who have survived cancer by showing the story of a cancer survivor and young mother trying to reclaim her life after fighting cancer.

Conceptualised by renowned, Linen Lintas and production through Film Farm, this four-minute movie strikes a deep chord with the strong and powerful silent storytelling.

The movie starts with sunrise and a bald woman waking up and looking at her older picture in a photo frame with her husband. While we see that, she has really beautiful and stunning hair in the picture, the frame then moves to the wrists of her hands – they are riddled with many needle marks, all suggesting to the viewer that the female has survived chemotherapy periods to fight against cancer. As the alarm goes off, we see the person which was in the photo frame sleeping next to her. She then proceeds with her morning chores of waking up her daughter, getting her breakfast and preparing for school, whilst her supportive husband nods on. The scene now moves forward to her trying to get ready to visit her place of work; while getting dressed up, she selects a western attire and with a shawl tied up like a turban to cover her bald head, later she wonders and ends up wearing a subtle saree. While placing on her bindi, her husband comes over and puts the bindi on the right side of her forehead instead, thus wishing to keep off any evil eyes which preys on her beauty. The same is later followed by her colleagues at work who are extremely welcoming and happy to see her after she makes a very hard, hesitant entry to

her place of work after a long term. While one woman colleague puts her own bindi beside the one positioned by her husband, some other colleague is seen setting the kajal from her eyes. The entire team of co-workers welcome her back even as she tries to remain strong and brave with tears in her eyes. The movie ends with a close up of the bald splendor, her eyes reflecting the courageous conflict with cancer. The scene then says, "Some people don't require hair to look beautiful." The movie is beautifully portrayed by means of the song which says 'Tu faulad, Tu phool'.

Cancer is one of the most dreaded sickness often leading sufferers and their own family with long and tiring battles for survival. The hassle is even acute whilst a woman is fighting the cancers; shedding hair because of excessive chemotherapy and to never regrow any of it, is a massive blow on her confidence. She requires all the assistance she can get from her family and friends, which includes her inner strength to get again to normal life. The Dabur Vatika Brave and Beautiful marketing campaign has precipitated a social motion to impact the manner we should treat female cancer survivors. By saluting them for their courage, the hair care brand has paved a new path for society.

It has additionally helped set up a stronger product proposition for the hair care logo that till now was only about how its products should get you thick and lustrous hair, which is totally conflicting to the ad. With 'Brave and Beautiful', Dabur is creating a spot for itself with the FMCG majors like P&G and HUL, brands that have also experimented with emotional advertising and tried to use emotional and aspirational messages of their campaigns rather than showing product benefits.

### **C. Case Study – 3 : Fair and Lovely**

The fairness industry has been going ahead with their advertisements telling a kingdom of human beings how happy and fulfilling they could become, how they can win the honour in the eyes of their mother, father and friends, with whom they can marry, what job they are capable of getting, ad campaign after ad campaign reinstating long-drawn beliefs and sowing back deep buried insecurities among the society in general.

A sixty-seconds TV advertisement that performed ceaselessly in India in the early-2000s was the start of sowing the seeds of this perception that Fair is Beautiful while Dark is not. In it, a retired father is dissatisfied that his spouse when she serves him a cup of coffee and asks to add extra milk for his coffee. But the milk is expensive, his needs immoderate, and the earnings of his daughter insufficient. He says it out loud that he might have favored if he had a son rather, considering a daughter isn't almost as capable of offering what a son could have for the family. His brown-skinned daughter, wearing a simple salwar-kameez overhears this. Initially, she's disappointed, crying in the bed and berating herself. But she quickly finds herself a job offer of an air hostess and applies for the same in the desire that landing the job offer will assist her in proving her father wrong and showing her worth. While preparing for her job interview, she uses a pores and skin lightening cream—and it really works. The dark complexion of her face vanishes and she becomes fair, and she's no longer naive. She is shown as a very fair girl with glowing face. She puts on a little pink skirt and enters the job interview place as the wind blow at her lustrous hair. Impressed by her confidence, beauty and artificial greater glow, the interviewers provide her the job that she yearns for. Being moved up in the system after some years, she is ready to take her father coffee at a reputed hotel and the father is now happy with his daughter's achievements and all is well in small screen television-land.

Here, if the advertisement is analysed, we understand how the brand is preying on the insecurities of the women who have dark skin which is a natural color in India. They create a need for the product by which they can become fair and improve their life. They directly relate fairness with beauty and confidence and eventually success. It is very important to notice here that these advertisements generally imply the fear of being unsuccessful in personal and professional lives unless one has a fair skin to flaunt [7]. The gender gap in the corporate world, the father who wishes for a son, the lack of self-esteem and confidence among dark skinned women and the obsession which people have with societal beauty standards like being thin, fair and having long

think hair, are all things that they will be missing out on if they don't use their product. The message that they are sending that having a darker complexion will land her no appropriate job, are all indicative of the darker social reality. And this is how they are using fear as an emotion to sell the beauty cream.

#### ***D. Case Study – 4 : Vicco Turmeric Ayurvedic cream***

Vicco has ubiquitous presence in every Indian household even before worldwide beauty manufacturers flooded the market with their mass-produced products. Vicco is one of the oldest skin care and beauty product producers. In the years after its launch, Vicco created a perception of itself as a unique and Indian beauty brand, carving out a spot for itself as a maker of Ayurvedic merchandise. The flagship Vicco turmeric cream, as an instance, was focused at the young Indian female, who is ready to be married. Associating the turmeric cream with the herbal Ayurvedic goodness of "haldi" – an essential part of the Indian wedding ceremony – helped Vicco brand itself not as a cosmetic product, but one which was developed as a natural alternative based on indigenous understanding. Vicco Turmeric, synonymous with its yellow shade and strong aroma of sandalwood turned into a huge success in the country and also paved its way to international markets.

The advertisement stands out for 2 motives. One, it conveyed to the consumers that the techniques used by older generations for years to beautify themselves was really worth adopting as they were based on natural ingredients. Secondly, it depicted an excellent amalgamation of traditional values and modernity.

Choosing an event which is every important in the life of a woman, a girl's wedding ceremony, it starts with beautiful shehnai song depicting floral decorations and making of a rangoli — all trying to create an Indian ambience and portray old culture — and pans on a mother escorting her daughter to be dressed and embellished inside the run-up to the wedding by her friends and family. Turmeric paste mixed with sandalwood, an age-old ritual, is applied generously on the bride's face and limbs under the watchful eye of the mother and father who have blended

feelings of happiness and disappointment wondering how speedily their girl has grown up. This historic ritual which is done to make girls look radiant on one of the most important days of their existence, is the pivot of the TVC as audiences relate to it in the right away. The post-marriage visuals, underline the modernity of the society with the couple getting to know each other possibly on their honeymoon. It is now that the product makes an appearance with the confident protagonist, called Banno earlier, making use of it. And they portray how the use of Vicco Turmeric Cream has helped the girl look beautiful and how it has made her married life fulfilling and happy.

The emotion used here is one of trust and anticipation. The claim that the formula is ayurvedic and does not contain any chemical creates a sense of trust amongst the viewers to create the confidence needed to use the product. The viewer is lured by the non-toxic ingredients and how it will beautify their skin naturally. It also tries to create a picture in the minds of the views of the kind of life they too might have if they used their product. The anticipation of a happy married life is a strong way to attract women who are in their marriageable age.

#### **E. Case Study – 5 : Garnier Men Acnofight face wash**

Garnier Men is No. 1 brand in Men's Skin care and cosmetics. The advertisement released in 2016 with Sushant Singh Rajput as the brand ambassador about living a lively and healthful life unfastened from any skin problems.

The ad conveys "Hit Pimples for a Six" and shows how the product can fight with 6 skin problem. The actor is shown hitting six balls, each ball representing a particular skin problem like acne, pores, oily skin, etc. It is impressive how the brand is using a sport to which its target audience is so well connected and can easily relate to. Customers these days are massive on sports especially cricket and with the present-day conversations round cricketing occasions, it is one of the best ways to connect with the target audience which are men who are young and sporty. This ad could right away hook up with the target segment. Sushant too, has had a robust association with the sport because of the movie based on M.S. Dhoni and is also a famous influencer. They have

attempted to speak their product benefits via a marketing campaign that speaks the same language as their consumers.

Through this incorporated campaign, Garnier Men aimed to leverage television and social media to promote the product. With virtual and TV being the lead mediums, the brand had also organized innovative contests to interact directly with young men and educate them about the product advantages.

Thus, we understand here how the ad creates an element of surprise and excitement and attempts to connect with its audience emotionally.

#### **Conclusion**

For any marketing campaign to be successful, one of the most important factors is to understand the target audience. Their likes and dislikes, their cultures and social interactions, their personalities and attitudes are important to understand in order to hit the mark.

There is an increasing awareness in the minds of marketers about the inefficiency of appealing rationally in advertising, communication and brand positioning. But Emotional appeal seem to be more superior in aiding the marketers to arouse the emotions needed to create the favourable perception of the brand or the product. The emotional connect which created by any brand by its advertising is one of the most salient feature and one of the most important factor leading to purchase which is universal for any country. Any successful attempt to make the viewers realize the importance of a product in their daily lives is a major key to unlock the success of the brand. It is also true that consumers who have an emotional connection with the brand tend to be more loyal and less price-sensitive. Furthermore, if the brand is successful in continuing to deliver emotional satisfaction to the consumers, they may become their ambassadors as well. However, excessive use of emotional appeal may also risk the overall perception of the brand. Thus, it should be used cautiously by understanding how it will influence the level of brand knowledge of the customers. Other than individual emotions of the viewer, social emotions are important as well. These social emotions are combinations of the basic emotions and are commonly found

to be specific to different cultures as they are a result of social influences and attitudes developed through the course of socialization.

Positive feelings like cheerfulness, pride, happiness, surprise and shortage of irritation are more linked with better advertising and marketing and popularity of the brand. It is also noted that advertisements which are primarily evoking humour have better brand recall and feature the potential to develop greater advert-evoked emotions. On the contrary, for the case of commercials which arouse warmth, the

degree of advert-evoked feelings does not extensively influence their brand reputation. These emotions have the capacity to improve impressions of the brand tremendously creating an inclination to make the purchase of the product. The same happy emotions also lead to better commercial and brand recall. Thus, the hypothesis being tested in the study are true for these 5 case studies and this very clearly shows that the role of advertisement evoked emotions within marketing and advertising campaigns can't be ignored.

### References

1. M. N. K. a. V. N. B. Tram, "The Effects of Emotional Marketing on Consumer Product Perception, Brand Awareness and Purchase Decision — A Study in Ho Chi Minh City, Vietnam," *Journal of Economics, Business and Management* Vol. 3, No. 5, May 2005.
2. D. Banerjee, "Emotional Marketing - A strategic way of brand recall and extension," SSRN, August, 2011.
3. D. Consoli, "EMOTIONS THAT INFLUENCE PURCHASE DECISIONS AND THEIR EMOTIONS THAT INFLUENCE PURCHASE DECISIONS AND THEIR ELECTRONIC PROCESSING," *Annales Universitatis Apulensis Series Oeconomica*, 11(2), 2009.
4. P. S. Youn-Kyung Kim, "Emotional branding speaks to consumers' heart: the case of fashion brands," *Fashion and Textiles*, 2019.
5. D. W. Richard Mizerki, "UNDERSTANDING AND USING EMOTIONS IN ADVERTISING," *Journal of Consumer Marketing* Vol. 3, pp. 57-69, 1986.
6. C. L. a. M. U. Salman Majeed, "Want to make me emotional? The influence of emotional advertisements on women's consumption behavior," *Frontiers of Business in China*, 2017.
7. R. R. G. a. K. Chavali, "Ethical Aspects in the Advertising of Fairness Creams," *The ICFAI University Press*, 2005.
8. D. P. Deshwal, "EMOTIONAL MARKETING: SHARING THE HEART OF CONSUMERS," *International Journal of Advanced Research and Social Sciences*, Vol 4, November 2015.
9. T. K. P. a. K. M. Tapan K Panda, "Does Emotional Appeal Work in Advertising? The Rationality Behind Using Emotional Appeal to Create Favorable Brand Attitude," O.P. Jindal Global University, 2013.
10. B. Barbosa, "Happiness in Marketing," *Entornos Creativos*, pp. 75-90, July 2019.
11. B. R. L. a. R. P. S. D. Balaji, "Successful Emotional Branding Campaigns on Television in India: An Exploration," *Indian Journal of Science and Technology*, Vol 9(15), April 2016.
12. J. Tierney, "Good News Beats Bad on Social Networks," March 2013. [Online]. Available: <https://www.nytimes.com/2013/03/19/science/good-news-spreads-faster-on-twitter-and-facebook.html?pagewanted=all>.
13. C. Ward, "Why Content Goes Viral: the Theory and Proof," January 2013. [Online]. Available: <https://moz.com/blog/why-content-goes-viral-the-scientific-theory-and-proof>.
14. D. Frenay, "The Importance of Emotions in Advertising," July 2016. [Online]. Available: <https://blog.emolytics.com/trends/importance-of-emotions-in-advertising/>.
15. P. Chakraborty, "7 Important Factors That



- Influence The Buying Decision Of A Consumer," January 2017. [Online].
16. P. Rani, "Factors influencing consumer behaviour," *International Journal of Current Research and Academic Review*, pp. 52-61, 2014.
  17. N. A. Anand Deshmukh, "Consumer Buying Behaviour towards Cosmetic Products," *International Journal in Management and Social Science*, Vol-3, July, 2015.
  18. K. Choi, "The Cosmetics Consumption Behavior Related to Aesthetic Consciousness in Post-80s, 90s Generation in Xi'an," 2007.
  19. S. Greenfield, "WHEN BEAUTY IS THE BEAST: The Effects of Beauty Propaganda on Female Consumers," University of Nebraska, Omaha, 2018.
  20. E. Tomalin, "Dove Real Beauty Sketches Becomes The Most Viewed Online Video Ad Of All Time," 20 June 2013. [Online]. Available: <https://unruly.co/news/article/2013/05/20/dove-real-beauty-sketches-becomes-viewed-online-video-ad-time/>.
  21. H. Long, "Dove's 'real beauty sketches' ad deserves some praise," 20 April 2013. [Online]. Available: <https://www.theguardian.com/commentisfree/2013/apr/20/dove-real-beauty-sketches-ad-women-perfection>.
  22. J. Millard, "Performing Beauty: Dove's 'Real Beauty' Campaign," *Symbolic Interaction*, April 2009.