

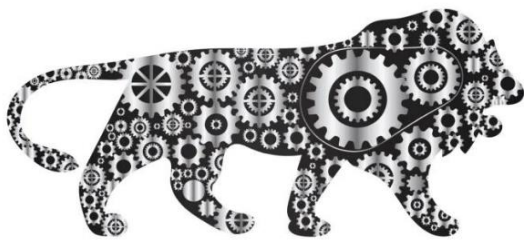


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Sneh Chavan ' Assistant Professor, Department of Computer studies, CSIBER-Chhatrapati Shahu Institute of Business Education and Research, Kolhapur -416001, India.

Ruturaj Patil and Digambar Koigade <sup>4</sup>MCA ,Department of Computer studies, CSIBER-Chhatrapati Shahu Institute of Business Education and Research

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## Employee's Perception about Marketing Strategies Adopted: A Case Study of a Manufacturing Organization

Ms. Nikita Pramod Todkar <sup>\*1</sup>, Dr. Manisha Jagtap <sup>\*2</sup>

<sup>\*1</sup> Student, Rajarambapu Institute of Technology, Shivaji University, CSIBER, Kolhapur, Maharashtra State, India, [manisha.jagtap@ritindia.edu](mailto:manisha.jagtap@ritindia.edu)

<sup>\*2</sup> Asst. Prof., Rajarambapu Institute of Technology, Shivaji University, CSIBER, Kolhapur, Maharashtra State, India

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### Abstract

This research paper explores the perception of employees regarding the marketing strategies employed by NK Production, a craft manufacturing company specializing in wooden products. The study gathers primary data from employees through a structured questionnaire and analyzes their responses using MS Excel. The demographic profile of the employees reveals that a majority are male, aged between 30 and 40, and hold various designations within the company. The research investigates the awareness of respondents regarding the types of marketing strategies adopted by the company, with a focus on B2B marketing, B2C marketing, word of mouth, email marketing, event marketing, and social media marketing. It also evaluates the impact of these strategies on customer satisfaction, sales growth, and competition. The findings suggest that B2B and B2C marketing strategies are the most widely recognized, with word of mouth and social media marketing also in use. There is a perception of good to fair impact on sales growth and competitor positioning. However, a majority of employees do not believe these strategies are sufficient to achieve the company's marketing and sales-related goals. In conclusion, while NK Production's products and customer services receive positive feedback, the traditional marketing strategies employed may not be maximizing their reach and impact. The study recommends exploring digital and social media marketing strategies to better engage with a wider audience and enhance sales performance.

**Keywords:** NK Production, marketing strategies, employee perception, customer satisfaction, sales growth, competition, digital marketing, social media marketing, traditional marketing, craft industry.

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### Introduction:

By facilitating companies to build their operations around the productive meeting of consumer requirements, marketing is a concept that has helped firms prosper in high-growth, moderately competitive sectors. In regions where economic growth has slowed and there are numerous competitors who use the marketing concept, it is essential to have a solid marketing strategy. This tactic considers a product line as well as predicted market changes made by rivals. A company's limited resources can be concentrated on the most promising chances for increased sales and a sustained competitive advantage through the use of a marketing strategy. Customer satisfaction is the primary objective of the fundamental marketing concept of a marketing strategy. A marketing strategy is a company's overarching plan for bringing people together and turning them into clients for its goods or services. A company's selling strategy often includes the company's price proposal, essential marketing messaging, information about the target market, and other important elements. The marketing plan, a document that details the kinds and scheduling of marketing activities, uses the marketing strategy as a guide. The strategy is anticipated to be lengthier than any individual

marketing plan because it contains the value proposition and key elements of a company's brand image. The optimal movement for these parts should be minimal. Businesses' marketing approaches might vary between industries and even within the same one. A single company's products and services are developed using marketing techniques that are specific to the needs of the target market. Effective marketing tactics can help customers understand products or services better. A strong selling strategy that specializes in the right products must be generated from marketing research in order to maximize profit potential and preserve the business. Strategic marketing is a way for companies to raise the quality of their goods and services while also raising sales. The main intention behind this paper is to examine the perception of the employees about various marketing strategies most frequently employed by the NK production and how well it affects its clients and rivals. Also to know more about how marketing techniques impact sales and which plan is best for the business.

### **Review of Literature:**

According to Kotler (2012) the combination of choice of target markets, the marketing blend along with the marketing pays level is a marketing strategy. The marketing tool list he means where the marketing performer systematizes its own actions to achieve an efficient increase in sales at a marketing blend scale". It is referred to as a blueprint which is frequently a comprehensive term to accomplish the organization's desired targets. Wolok (2021) examines the mapping of prospective marketing strategies to boost the competitive standing of the craft industries in Gorontalo and clarifies the best marketing approach to do so. This study used a descriptive quantitative technique to map the issues and develop the best course of action. Additionally, a hierarchy analysis was done to look at the underlying causes of the growth of the craft industries. The analysis's findings indicate that, in addition to products, pricing, processes, and promotions also play a key influence in boosting industry competitiveness.

Makhitha (2016) demonstrated that craft makers occasionally launch new products and continuously enhance their current offerings. Craft manufacturers think their goods are superior and distinctive. They encounter difficulties because of a lack of consumer demand for their items and the difficulty in locating potential clients. Craft makers must decide on the target market for their products, as well as the needs of that market, before developing a suitable marketing mix element approach. Anute et al. (2015) conducted a study to gauge the effectiveness of various television advertising elements on brand building and purchase behavior of customers. They found that The Purchase Decision in case of Network Service Providers is mostly influenced by the Television advertisement that put more stress on the Message element. The Brand Building in case of Network Service Providers is influenced by different TV advertisement elements for different brands. The study conducted by Khan & Amir (2013) is based on the four Ps of marketing, or the product, place, pricing, and promotion. Due to a variety of factors, rural producers currently face marketing challenges with their goods and services. The success of the craft industries depends on how well they develop and promote craft products in accordance with the demands, needs, and desires of the consumers. Novlanting & Diandra (2018) examined Kiwang Kreatif Craft's (KKC's) marketing plan to maximize the company's expansion. The purpose of this is to outline the marketing methods that KKC is currently using and to suggest an advanced marketing plan to improve the performance of their company. This study employed a qualitative research methodology. The findings indicate that the bulk of advertising tactics are still largely traditional. Others, including KKC, should use social media and internet marketing to enhance sales performance.

**Methodology adopted:**

This Study is based on Primary data, which is collected by using systematic random sampling techniques. With the help of structured questionnaire data is collected from employees of NK production. Further Collected data is processed by using MS Excel 2016.

**Profile of NK Production:**

NK Production is the Craft Manufacturing Company, established in 2018 by Nikhil Kate. It produces the wooden craft products to the customers with their specific requirements. Its production unit is located in New MIDC, Kodoli, Satara. Products of the company are Coaster set, wooden tray, wooden spices box, Gift packaging box, vegetable tray, Incense holder etc.

**Concept of Marketing Strategy:**

Marketing strategy is a method that enables a company or organization to focus on limited resources in order to increase sales on the most profitable opportunities and thus achieve long-term competitive advantages. In order to increase profit and retain the business venture for an extended period of time, the marketing tool must be based on the findings of market studies and place emphasis on the most appropriate product blend. The primary goal of marketing strategy is to maximize gross sales and develop a cutting-edge competitive advantage. Marketing strategy encompasses all-important, short-term, and long-term activities on-site of marketing that deals with the analysis of a company's strategic initial circumstances and the formulation, evaluation, and selection of market-oriented strategies, enabling it to achieve the targets & goals of the company and fulfilling its marketing objectives.

**Objectives of marketing strategy are:**

- Lead generation-It is the process of attracting and capturing the attention of potential clients and prospects. We can generate leads by utilizing numerous marketing tactics.
- Brand Awareness- Making potential customers aware of your company's products and services.
- Brand consideration- Getting prospects to consider the company's product.
- Sales-Companies can increase their sales success by encouraging prospects to buy their goods and through marketing methods.

**Advantages of marketing strategy:**

- Marketing strategy gives a company an advantage over its competition.
- Strategy aids in the development of products and services with the highest profit potential.
- It aids in determining the appropriate price for an organization's goods and services based on market research data.
- Strategy ensures that departments work together effectively.
- It enables a company to make the best use of its resources in order to deliver a sales message to its potential customers.
- A marketing strategy assists in determining the promotional budget in advance, as well as developing a mechanism for determining the extent of the plan, i.e. the money earned by the advertising plan.
- Aids in the development of an organizational plan to meet the needs of customers. A marketing strategy is a strategy for selling products or services in a way that results in long-term profitable growth. It is a brand's blueprint; it tells the brand where to go and how to get there the best way possible. Great brands employ strategy to deliver products and services that have a significant impact. Every brand decision stems from marketing



strategy and is expressed at every point of truth.

### Data Analysis:

Table No. 1: Demographic information of Respondents

Sl. No.	Factors	Options	Responses	Percentage
1	Gender	Male	72	66.67%
		Female	36	33.33%
		Total	108	100
2	Age	20 - 30	36	33.33%
		30 - 40	45	41.66%
		40 above	27	25%
		Total	108	100
3	Designation	Marketing Executive	20	18.51
		Intern	18	16.66
		HR Manager	9	8.33
		Sales executive	8	7.40
		workers	23	21.29
		other	30	27.77
		Total	108	100

Above table shows 66.67 % of employees are male. 33.33% of employees are of the 20 - 30 age category and the rest of employees are in the 30 - 40 age group and 40 above which is 41.66% and 25% respondents respectively. 18.51% of all responses employees are Marketing Executives, 16.66% of responses are Interns, and 21.29% from total responses are workers and rest i.e 27.77% responses employees are working on other positions

Table No.2: Awareness of the respondents regarding types of marketing strategies Adopted by the company

Sl. No.	Marketing strategies	No. of Respondents
1	B2B Marketing	45
2	B2C Marketing	52
3	Word of mouth	38
4	Email Marketing	21
5	Event marketing	16
6	Social Media Marketing	16

It can be seen from the above graph, that out of 108 respondents 52 and 45 respondents said that organization is using B2B and B2C marketing strategies respectively, and 38 responded as word of mouth. And 21 employees responded to email marketing strategies. While 16 respondents responded that social media and event marketing strategies are used by the organization.

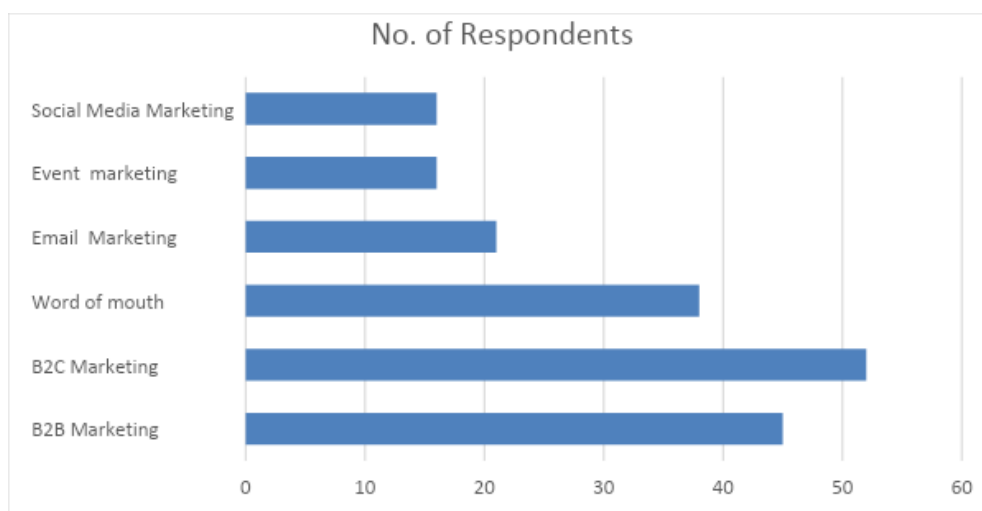


Table No. 3: Perception of the respondents regarding Marketing Strategies Adopted by the Company

Sl. No.	Factors	Options	Responses	Percentage
1	Impact of marketing Strategies	Yes	46	42.59
		No	42	38.88
		Maybe	20	18.53
		Total	108	100
2	Marketing strategies impact on sales growth	Excellent	12	11.11
		Good	41	37.96
		Fair	37	34.25
		Poor	18	16.66
		Total	108	100
3	Impact of marketing strategies on Competitor	Yes	43	39.82
		No	32	29.62
		Maybe	33	30.56
		Total	108	100
4	Impact of word of Mouth	Yes	32	29.62
		No	51	47.23
		Maybe	25	23.15
		Total	108	100
5	B2B and B2C marketing strategies are effective or not	Yes	54	50.00
		No	36	33.34
		Maybe	18	16.66
		Total	108	100
6	Best marketing strategies	B2B and B2C Marketing strategies	22	20.37
		Social media marketing	42	38.88

		Both	44	40.74
		Total	108	100
7	Impact of marketing strategies being adopted	Excellent	13	12.03
		Good	42	38.88
		Fair	34	31.48
		Poor	19	17.59
		Total	108	100
8	Quality of Marketing and advertising activities conducted	Excellent	14	12.97
		Good	40	37.03
		Fair	33	30.55
		Poor	21	19.45
		Total	108	100
9	Overall Impact of the marketing strategies	Excellent	11	10.18
		Good	33	30.55
		Fair	48	44.45
		poor	16	14.81
		Total	108	100
10	Achievement of company's marketing and sales-related goals with the help of Marketing strategies	Yes	38	35.18
		No	44	40.75
		Maybe	26	24.07
		Total	108	100
11	Are Marketing strategies sufficient	Yes	34	31.48
		No	56	51.85
		Maybe	18	16.66
		Total	108	100

The above table depicts that 42.59% employees responded as there is impact of marketing strategies on the customers and 38.88% said that there is no impact of marketing strategies on customers and the rest of the employees are not aware about this. Regarding impact of marketing strategies on the sales growth most of the employees i.e. 37.96% responded that there is good impact, 34.25% responded there is fair impact of strategies on sales growth and 11.11% employees responded that excellent impact of strategies on sales growth with percentage and remaining 16.66% employees responded for poor impact. 39.82% employee respondents say that there is impact of marketing strategies on competitors, and 29.62% employees responded that there is no impact of marketing strategies on competitors. The response regarding impact of word of mouth marketing strategy, 47.23% employees responded as there is no impact of word of mouth marketing strategy and 29.62% responded as there is impact of word of mouth strategy. While concerning B2B and B2C marketing strategies, 50% of Employees responded as B2B and B2C marketing strategies are effective for the company. 33.34% responded as B2B and B2C marketing strategies are not effective for the company. And the rest 16.66% of respondents are not sure about that.

According to 38.88% employee Social Media marketing strategy is better than B2B and B2C marketing strategies. And 20.7% responded from total respondents as B2B and B2C

marketing strategies are the best strategy. And 40.74% respondents responded as both marketing strategies are best strategies. Response related to Impact of Marketing Strategies being adopted by NK Production, shows that 12.03% employees responded that it is excellent, 38.88% responses says there is good impact, and 31.48% employee responded there is fair impact of marketing strategies which is adopted by the company. From the data collected, it has been observed that the majority of the respondents i.e., 37.3% has given a good rating to the marketing and advertising activities done by NK Production, 30.55% has given Fair rating and 19.45% has given poor rating, and 12.97% respondents gives the excellent rating for marketing and advertising activities conducted by organization. While 44% gave fair rating to the overall impact of marketing strategies of NK production company, 30.55% responded for good impact and only 10.18% respondents responded for Excellent overall impact of marketing strategies and remaining 14.81% employees responded for poor impact. According to the majority of the respondents i.e. 44 out of 108 Marketing strategies used by the company are not helpful in achieving the sales goal of the company, and 38 respondents responded as marketing strategies helps to achieve the marketing and sales related goals. More than 50% respondents say that Marketing strategies are not sufficient, while 31.48% have said that marketing strategies adopted are sufficient for the company.

### **Findings and Conclusion:**

After Collecting responses and its analysis it found that, More than 65% of employees are male and most of the employees are between the age of 30- 40. The Company is using B2B and B2C marketing and word of mouth strategy for marketing its products, they are not much aware about social media marketing strategy. From the analysis we found that there is a good and fair impact of strategies on sales growth. In comparison with other strategies B2B and B2C marketing strategies are more effective, when compared with word of mouth strategy.

Marketing and advertising activities conducted by the company are good, as most of the respondents rated it as good and fair. The overall impact of the marketing strategies is fair. Through the current marketing strategies, the company is unable to achieve the marketing and sales related goals. Most of the respondents responded that the strategies which are used by companies are not sufficient.

Thus from the analysis of employee perception concerning the marketing strategies adopted by the NK production it can be concluded that Company's products and customer services are good but their products are not reaching to maximum peoples. They are using the traditional marketing strategies like B2C marketing strategies, Word of Mouth etc. These strategies are good but not very effective, through the implementation of these strategies they cannot increase the sales performance and attract more customers. For reaching more people or customers and increasing the sales they have to improve and modify their marketing strategies. They should use strategies like social media strategy and Digital Marketing. They can easily get more audience and reach out to the maximum people with creative content and advertisements on platforms like Instagram, Facebook, YouTube, Twitter etc. posting the short video and creative advertisements, contents can easily catch up the audience. Marketing strategies provide valuable insight to the company's performance. And helps in achieving the objectives or goals of the organization.

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## An Overview of Inbound Marketing

Ms. Anuradha Gaikwad, Asst. Professor, CSIBER, Kolhapur, [augaikwad@siberindia.edu.in](mailto:augaikwad@siberindia.edu.in)

### ABSTRACT

Digital marketing is an important strategy that is being used by businesses globally to effectively market their products. Digital Marketing is associated with use of a variety of tools and techniques right from official websites of the company, their social media accounts, mobile apps either from the desk top or mobile phones via the internet. Inbound marketing is an important aspect of the digital marketing strategy that is mainly associated with content generation for the digital mediums. It is pivotal in engagement of customers, enticing them to buy products offered. Content creation through the use of websites, articles, social media sites, blogs, etc is basically all a part of inbound marketing. An attempt is made through this paper to go through the conceptual aspects of digital marketing and to find out the importance of digital marketing to businesses. The paper has been generated through review of available literature in order to comprehend the scope of digital marketing.

**Keywords** – Inbound marketing, Digital marketing, Content generation, social media.

### Introduction:

Marketing is no doubt an important functions in today's world of business. It is also one of the most dynamic of fields and subject to changes over period. The current trends in technology have had a major impact in the way marketing functions are carried out today. The introduction of World Wide Web and its utility made it possible for its utilisation for e-commerce. That was the initial foray of the business world into the new technology. With advances in technology and the invention of variety of tools like the desk tops, mobiles, the advent of internet and digital technology Digital Marketing has been gaining importance.

Digital marketing is a broad term that encompasses all marketing efforts that use digital channels to promote products or services. In other words, digital marketing refers to any marketing strategy that utilizes the internet and other digital technologies such as mobile phones, social media, search engines, email, and other digital platforms to reach and engage with a target audience.

Digital marketing aims to create brand awareness, drive traffic, generate leads, and ultimately increase revenue and customer loyalty. It involves a range of techniques and tactics, such as email marketing, search engine optimization (SEO), pay-per-click advertising, social media marketing, content marketing, and more.

The main advantage of digital marketing is that it makes it possible for businesses to reach a wider audience, measuring the effectiveness of their campaigns in real-time, and target specific demographics and user behaviours with a high degree of precision. As more and more consumers spend time online, digital marketing has become an essential component of any successful marketing strategy.

Digital marketing can be defined as a tool or technique that makes use of digital technologies on the internet with the help of tools like mobile phones, display advertising, etc (Desai, 2019). According to (Mahajan 2016) digital marketing is associated with the process through which a company attains a digital identity and presents itself to a number of users in a virtual world.

Digital marketing is a digital identity of a company; through which it presents itself in the virtual world to an enormous number of users (Sawicki 2016). According to (Yasmin et. al 2015) digital marketing is the use of digital channels used widely to reach consumers and

promote products or services. According to Ryan and Jones (2009), digital marketing refers to the use of digital technologies to promote products or services through various online channels such as websites, search engines, social media, email, mobile apps, and more. Digital marketing has become an essential component of any successful marketing strategy in the interconnected world.

One of the secret weapons of digital marketing is its ability to focus on intended audiences with a high degree of precision. By leveraging data analytics and user behaviour tracking, marketers can gain significant insights into consumer preferences and tailor their marketing messages accordingly (Holliman & Rowley, 2014). Additionally, digital marketing enables businesses to effectively measure their campaigns in real-time, providing valuable feedback which can be instrumental for refining marketing strategies and optimize ROI (Siddiqui, 2018).

Another important aspect of digital marketing is its potential to foster engagement and interaction with customers. Social media platforms, in particular, have become a key channel for building brand awareness and engaging with consumers (Holliman & Rowley, 2014). By creating compelling content, businesses can entice and retain customers, as well as encourage user-generated content and word-of-mouth marketing.

Despite its many benefits, digital marketing also presents several challenges. An issue of major importance is the need for businesses to keep pace with rapidly changing technologies and trends (Siddiqui, 2018). In addition, the immense volume of data being generated by digital marketing campaigns can be immense, making it difficult to extract actionable insights and measure ROI (Ryan & Jones, 2009).

Overall, digital marketing has become an indispensable component of any fruitful marketing strategy. By leveraging digital technologies and online platforms, businesses can reach wider audiences, engage with customers, and measure the efficacy of their campaigns in real-time. However, as the field continues to evolve, it is important for marketers to stay up-to-date with the latest trends and technologies in order to stay competitive.

### **Objective**

The following article attempts to answer the questions

1. What is the scope of Digital Marketing?
2. What is Inbound Marketing?
3. What are the elements of Inbound Marketing?

### **Research Methodology**

The paper is based on reviews of various articles published in research journals as well on various websites, blogs, etc.

In this paper a review of selected research studies that have been carried out about Digital Marketing and Inbound Marketing. Towards this end, specific search terms were used in Google Scholar search engine, such as “digital marketing” “inbound marketing”, “inbound digital marketing”, and “online marketing”. The results of these searches were shortlisted as per the year of publication. For the purpose of this study, only studies published after 2010 were used, in order to examine the concept of Inbound Marketing

### **Elements of Digital Marketing**

Digital marketing encompasses a broad range of tactics and techniques designed to promote products, services, or brands using digital channels. The various elements of digital marketing include:

Search engine optimization (SEO): The process of optimizing web pages to rank higher in search engine results pages (SERPs) for specific keywords and phrases.

Pay-per-click (PPC) advertising: Advertising in which advertisers pay a fee each time a user clicks on one of their ads.

Content marketing: The creation and distribution of valuable and relevant content in order to attract and engage a target audience.

Social media marketing: The use of social media platforms for promotion of a product or service, so as to build brand awareness, and engage with customers.

Email marketing: The use of email to promote products or services, nurture leads, and develop relationships with customers.

Affiliate marketing: A marketing model in which businesses partner with affiliates who promote their products or services and earn a commission for each sale or lead generated.

Influencer marketing: A type of marketing that involves partnering with influential individuals or organizations to promote a product or service.

Mobile marketing: A form of digital marketing which targets users on mobile devices, such as smartphones and tablets.

Video marketing: The use of videos to promote a product or service, educate customers, and build brand awareness.

Web analytics: The procedure of collecting, measuring, and analysing website data to understand behaviour of users and improve the performance of digital marketing campaigns.

Digital marketing is a broad field that encompasses various tactics and techniques with a specific purpose of promoting products, services, or brands using digital channels. The various elements of digital marketing have evolved rapidly over the years, driven by advances in technology and changes in consumer behaviour. The key elements of digital marketing and their role in the overall marketing mix is given below:

- Search engine optimization (SEO): SEO is the process of optimizing web pages to rank at higher order in search engine results pages (SERPs) for specific keywords and phrases. According to a study by Moz (2021), 53.3% of website traffic comes from organic search, highlighting the importance of SEO in digital marketing. Effective SEO strategies involve on-page optimization, technical optimization, and link building to improve the visibility and ranking of a website.
- Pay-per-click (PPC) advertising: PPC advertising is a form of online advertising in which the advertisers pay a fee each time a viewer clicks on one of their ads. Advertising on PPC allows businesses to reach a broader audience and direct traffic to their website quickly. According to a report by Google (2021), businesses make an average of \$2 in revenue for every \$1 they spend on Google Ads. Effective PPC campaigns involve keyword research, ad targeting, and continuous optimization to maximize return on investment (ROI).
- Content marketing: Content marketing is the creation and distribution of valuable and relevant content to attract and engage a target audience. Content marketing is used in various formats such as blog posts, videos, infographics, and social media posts. According to a study by HubSpot (2021), businesses that prioritize content marketing generate 3 times more leads than those that don't. Effective content marketing involves developing a content strategy, creating content with high-quality, and promoting that content through various channels.
- Social media marketing:
- Using social media platforms to market a product or service, interact with consumers, and increase brand awareness is known as social media marketing. Social media platforms, such as Facebook, Twitter, and Instagram, offer businesses a powerful tool for reaching a large and engaged audience. According to a report by Hootsuite (2021),



there are over 4.2 billion social media users worldwide. Effective social media marketing involves developing a social media strategy, creating engaging content, and engaging with customers to build relationships and increase brand loyalty.

- **Email marketing:** Email marketing involves the use of email to promote products or services, nurture leads, and build relationships with customers. According to a report by Campaign Monitor (2021), email marketing generates an average ROI of \$42 for every \$1 spent. Effective email marketing involves building an email list, creating engaging email content, and segmenting that list to deliver targeted messages to specific groups of customers.
- **Affiliate marketing:** Affiliate marketing is a marketing model in which businesses partner with affiliates who promote their products or services and earn a commission for each sale or lead generated. Affiliate marketing allows businesses to reach a larger audience and drive traffic to their website through the use of affiliates' websites and social media channels. According to a study by Business Insider (2021), affiliate marketing is expected to grow to a \$8.2 billion industry by 2022. Effective affiliate marketing involves building relationships with affiliates, providing them with high-quality promotional materials, and tracking their performance to optimize the program for maximum ROI.
- **Influencer marketing:** Influencer marketing entails engaging with influential individuals or organizations to promote a product or service. Influencer marketing allows businesses to make use of the trust and credibility of influencers to reach a large and engaged audience. According to a report by Influencer Marketing Hub (2021), businesses earn an average of \$5.78 for every \$1 spent on influencer

Formulation of a strategy for the use and implementation of digital marketing is an important aspect of Digital Strategy Formulation. The digital strategy consists of both inbound marketing as well as outbound marketing.

### **Outbound Marketing**

Outbound marketing refers to a type of marketing strategy that involves reaching out to potential customers or clients through various forms of advertising or communication. This can include tactics such as cold calling, direct mail, email marketing, TV, or radio advertising, and more.

The basic purpose of outbound marketing is to proactively seek out and engage with potential customers in the hopes of converting them into actual customers. This contrasts with inbound marketing, which focuses on creating valuable content and experiences that attract customers to a business naturally.

Outbound marketing can be effective in certain industries and situations, but it can also be seen as intrusive and annoying by some consumers. As a result, many businesses today are shifting their focus towards more inbound marketing tactics that focus on building relationships with customers through valuable content and experiences.

Inbound marketing is a marketing strategy that concentrates on attracting potential customers to a business or brand through the creation of relevant and valuable content. Rather than interrupting consumers with traditional advertising methods such as TV commercials or print ads, inbound marketing aims to provide useful and informative content that customers actively seek out.

It typically involves the creation of content such as blog posts, social media updates, e-books, whitepapers, webinars, and other types of content that address the needs and interests of a target audience. By providing valuable information and resources, businesses can build trust and credibility in order to attract potential customers.

In addition to content creation, inbound marketing also involves search engine optimization (SEO), social media marketing, and email marketing. Businesses can expand their reach and boost visibility by optimizing their content for search engines and marketing it on social media platforms. Additionally, email marketing may be utilized to develop relationships with potential clients and nurture leads.

The goal of inbound marketing is to create a seamless and personalized experience for potential customers, from the first point of contact through to the purchase and beyond. By providing valuable content and building relationships with customers, businesses can establish a loyal customer base and increase customer retention rates.

All things considered, inbound marketing is a customer-focused strategy that emphasizes establishing rapport and offering value to prospective clients. By creating relevant and valuable content, businesses can attract potential customers, build trust and credibility, and ultimately drive revenue growth.

The capacity of inbound marketing to draw in new clients by producing insightful and timely content has made it a highly popular marketing tactic in recent years. According to HubSpot (2021), inbound marketing involves creating content that solves problems or answers questions for a target audience, and using that content to attract potential customers to a business or brand.

One of the key benefits of inbound marketing is its ability to build trust and credibility with potential customers. By providing useful and informative content, businesses can establish themselves as experts in their field and create a strong brand identity (Kietzmann et al., 2011). Additionally, inbound marketing can help businesses by targeting specified demographics and user behaviors with a high degree of precision, resulting in more effective lead generation and conversion (Barnes & Mattson, 2016).

Inbound marketing typically involves the use of a range of content marketing tactics, including blog posts, social media updates, e-books, whitepapers, webinars, and similar other types of content. Businesses may attract potential consumers and establish long-lasting connections with them by producing content that speaks to the needs and interests of a target audience. (Halligan & Shah, 2010).

In addition to content creation, inbound marketing also involves search engine optimization (SEO), social media marketing, and email marketing. Businesses can expand their reach and boost visibility by optimizing their content for search engines and marketing it on social media platforms. Email marketing can also be used to nurture leads and build relationships with potential customers (Kietzmann et al., 2011).

Overall, inbound marketing has become an essential component of any successful marketing strategy. By providing valuable content and building relationships with potential customers, businesses can establish a loyal customer base and increase customer retention rates. However, as the field continues to evolve, it is important for businesses to stay up-to-date with the latest trends and best practices in order to stay competitive.

### **Key elements of Inbound Marketing**

The key elements of inbound marketing include:

**Content creation:** Content creation is the foundation of inbound marketing. It involves creating high-quality and informative content, such as blog posts, ebooks, videos, and social media posts, that addresses the needs and interests of potential customers. The content should be optimized for search engines and shareable on social media to reach a larger audience. Content creation is a crucial element of inbound marketing, as it involves creating high-quality content that attracts potential customers to a website or social media platform. According to a study by the Content Marketing Institute (2021), 89% of B2B content marketing is used by marketers to attract and engage customers. Effective content creation

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involves understanding the target audience, creating valuable and informative content, and optimizing it for search engines.

**Search engine optimization (SEO):** Optimizing your website and content to appear higher for particular keywords and phrases in search engine results pages (SERPs) is known as search engine optimization, or SEO. Effective SEO strategies involve on-page optimization, technical optimization, and link building to improve the visibility and ranking of your website. According to a study by Moz (2021), organic search is responsible for 53.3% of website traffic. Effective SEO involves on-page optimization, technical optimization, and link building to improve the visibility and ranking of a website.

**Social media marketing:** Using social media sites like Facebook, Twitter, and Instagram to distribute and market your content, interact with potential clients, and increase brand awareness is known as social media marketing. Social media platforms offer businesses a powerful tool for reaching a large and engaged audience. According to a report by Hootsuite (2021), there are 4.2 billion active social media users worldwide. Building brand awareness, interacting with potential customers, and producing and disseminating insightful content are all essential components of successful social media marketing.

**Email marketing:** Email marketing involves using email to communicate with potential and current customers. It is an effective way to develop leads and build relationships with customers by offering them with valuable content and offers that align with their interests and needs. According to Campaign Monitor (2021), the average email open rate across all industries is 18%. Effective email marketing involves creating personalized and valuable content, segmenting email lists, and analysing performance metrics.

**Lead generation:** Lead generation is the process of attracting and capturing potential customers' contact information, such as their name and email address. Effective lead generation strategies involve creating high-quality content, such as ebooks and webinars, and using forms and landing pages to capture contact information. According to HubSpot (2021), businesses that prioritize lead generation are 13 times more likely to see a positive ROI. Effective lead generation involves creating valuable content, using forms and landing pages to capture contact information, and nurturing leads through personalized and informative content.

**Marketing automation:** Marketing automation involves using software tools to automate repetitive marketing tasks, such as email marketing and lead nurturing. It enables businesses to personalize their marketing efforts and deliver relevant content to potential and current customers at the right time. According to a report by HubSpot (2021), businesses that use marketing automation generate 2 times more leads than those who do not. Effective marketing automation involves setting up workflows, segmenting contact lists, and using data to personalize marketing efforts.

**Analytics and reporting:** Analytics and reporting include monitoring and evaluating the results of your inbound marketing initiatives to pinpoint problem areas and fine-tune your plan for optimal return on investment. Effective analytics and reporting require setting up tracking and measurement tools, such as Google Analytics and HubSpot, and regularly reviewing and analysing the data to make informed decisions.

In the end, the essential components of inbound marketing come together to draw in, hold the attention of, and excite prospective clients by offering them experiences and informative content that suit their requirements and areas of interest. Businesses may forge close bonds

with their target market and promote long-term success by putting the consumer first and offering a tailored, educational experience. According to a report by HubSpot (2021), businesses that measure marketing performance are 1.5 times more likely to see a positive return on investment. Effective analytics and reporting involve setting up tracking and measurement tools, regularly reviewing and analysing data, and making informed decisions based on the results.

The adoption of inbound marketing tactics considerably increases the possibility of lead generation and conversion, according to Baranchenko et al.'s (2019) work on the subject. It is resourceful in influencing a motivated audience by providing it with content that is relevant and of high quality. They further state that inbound marketing with insignificant investment is instrumental in increasing the number of transactions. This is an effective toolkit that promotes goods as well as brings about improvement in the loyalty of target audience and helps in brand popularisation. Soegoto et. Al (2018) observe that inbound marketing is an advertisement that consumers prefer and hence is important in targeting the right market, the right people, the right place, and time. Inbound marketing used in combination with digital advertisements would be able to create a comforting and a positive experience for the users of the internet. Dakouan (2019) state that compared to outbound marketing inbound marketing is superior as it aims in identification of target customers and adept the communication to the more effectively. Essentially inbound marketing is nothing but effective content creation which helps in micro targeting of the consumers. Assiriyage (2019) focus content as the main factor that has an immense impact on Inbound Marketing.

Dakoun et.al (2018) state that inbound marketing has efficiency that is superior to outbound marketing as it identifies targets customers and allows better adaptation of the company's communication with them. Patrutiu-Baltes (2016) state that the change in consumer behaviour – the willingness and preference to engage in online shopping, obtaining online information through variety of sources including product reviews has increased the importance of Inbound marketing.

Bueno et .al (2018) have found that effective inbound marketing has a major impact on lead to conversion rate as demonstrated in their study on impact of Inbound marketing on PG programmes.

Nick Pateman & Don Holt (2011) state in their book on Inbound Marketing that inbound marketing has been pushed to the forefront due to the advances in the digital tools that we use. Customers always wanted transparency with respect to the communication that they receive from the companies regarding their products and inbound marketing has helped them achieve it.

### **Conclusion:**

Thus, inbound marketing is a driving force that influences and drives customers to engage with companies that resort to Digital Marketing. The most important factor in favour of Digital Marketing over traditional marketing is the ability it has to give returns on investment with the analytics of usage. Inbound marketing plays an important role in both engagement and conversion of leads into actual sales.

There is a scope to conduct empirical studies on the subject in order to identify the utility of various inbound marketing strategies.

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## Challenges before standalone UG Engineering Institution in Implementation of NEP 2020

Mane S D<sup>\*1</sup>, Shivaleela Arlimatti,<sup>\*2</sup> Rashmi Jadhav<sup>\*3</sup>

<sup>\*1</sup>Dr. D. Y. Patil Prathisthan's College of Engineering, Salokhenagar, Kolhapur, Maharashtra, India 416007

<sup>\*2</sup>Department of Computer Science & Engineering, Dr. D. Y. Patil Prathisthan's College of Engineering, Salokhenagar, Kolhapur, Maharashtra, India 416007

<sup>\*3</sup>Department of Civil Engineering, Dr. D. Y. Patil Prathisthan's College of Engineering, Salokhenagar, Kolhapur, Maharashtra, India 416007

**ABSTRACT** —The National Education Policy (NEP) 2020 is a major policy reform in the Indian education sector. It aims to transform the education system to make it more relevant, equitable, and inclusive. The NEP has several provisions that are relevant to stand-alone undergraduate engineering institutions (UGIs). However, there are also some challenges that these institutions will face in implementing the NEP. NEP 2020 is a new initiative and not much research has been undertaken on this policy. This gives opportunity for research so as to understand the difficulties the HEI especially UG engineering institutions are likely to face in the process of implementation of the new policy. Institutions in India can be Universities (State, State Private, deemed to be Universities), Institutions (Autonomous or Affiliated and Standalone). To understand the various bottlenecks in implementation process brainstorming was undertaken with managements and Principals of few institutions came up with their opinions. The various pillars of NEP were discussed so that all understand the NEP requirements in detail. The inputs from stakeholders on the major points were included and recorded on a google form which was distributed randomly in various social media groups to solicit their opinion. The respondents were from various states of the nation, had a varied experience ranging from 17 years to 42 years and occupied various positions from Associate Professor to Professor, Dean, Vice Principal and Principal. The inferences drawn indicate that over 57% of the respondent's institutions have not gone for NAAC accreditation, and they were aware of the various initiatives of the nation viz. National Research Foundation and National Credit Framework. As it's too early to decide 71% of the respondents have not taken a call on the type of university they wish to become in coming years (Unitary or Cluster university) but 50 % of respondents have shown interest to be a research-intensive university with 35% being focused on Teaching intensive university. Majority of the institutions represented were offering single program (60%) and only 40% of institutions were offering more than one program. Majority of the respondents plan to introduce technical programs in coming years, followed by humanities program to make the institution multi-disciplinary. The data reveals that as of now the institutions do not have scope for future expansion and need to invest in additional built-up area to cater to new programs.

**Keywords**—NEP 2020, Implementation Challenges, Educational Policy, Engineering Education

### Introduction

The NEP 2020 is a major policy reform policy introduced in India with the aim of transforming the country's education system in the Indian education sector. It aims to transform the education system to make it more relevant, equitable, and inclusive. The NEP

has several provisions that are relevant to stand-alone UGIs. However, NEP 2020 encompasses various levels of education, including engineering education, and sets out to bring about significant changes to improve the quality, relevance, and inclusivity of education in the country.

NEP 2020 holds particular significance for engineering education as it seeks to address the challenges and gaps in the current engineering curriculum and pedagogy. The policy emphasizes a multidisciplinary approach, hands-on learning, and the integration of industry-relevant skills to ensure that engineering graduates are well-equipped for the dynamic demands of the modern world.

Understanding the challenges specific to standalone UG engineering institutions is crucial as they play a significant role in engineering education across the country. By identifying and addressing these challenges, policymakers, administrators, and stakeholders can better support these institutions in effectively implementing the reforms outlined in NEP 2020.

The purpose of this paper is to examine the challenges faced by standalone undergraduate (UG) engineering institutions in implementing NEP 2020. Standalone UG engineering institutions refer to engineering colleges or institutions that are not affiliated with larger universities but operate independently. These institutions often have their own unique set of circumstances, constraints, and resources. This paper aims to shed light on the specific challenges faced by standalone UG engineering institutions and provide insights and recommendations to address these challenges. By doing so, the paper seeks to contribute to the existing body of knowledge on the implementation of NEP 2020 in the context of engineering education, and ultimately, facilitate the successful transformation of standalone UG engineering institutions in alignment with the goals of NEP 2020.

### **Literature review**

Maharashtra Govt in 2023-2024 has initiated Implementation of NEP 2020 for UG Courses (Non-Professional) and has plans to implement the same in professional institutions by 2024-25 (144 Institutions in Maharashtra to Start NEP Implementation This Yr: Patil, n.d.).

The NEP 2020 curriculum framework offers

- i. The flexibility to move from one discipline of study to another;
- ii. The opportunity for learners to choose the courses of their interest in all disciplines;
- iii. The multiple entry and exit options with the award of UG certificate/ UG diploma/ or three-year degree depending upon the number of credits secured;
- iv. The flexibility for learners to move from one institution to another to enable them to have multi and/or interdisciplinary learning;
- v. The flexibility to switch to alternative modes of learning (offline, ODL, and Online learning, and hybrid modes of learning).

### **National Education Policy 2020:**

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The NEP 2020 is a comprehensive policy framework for the development of education in India (Kalyani, 2020). It was approved by the Government of India in July 2020 and aims to bring about transformative changes across all levels of education, from school to higher education. Here are the key highlights and objectives of the NEP 2020:

1. Holistic and Multidisciplinary Education: The NEP 2020 promotes a holistic and multidisciplinary approach to education, emphasizing the integration of various disciplines and skills. It aims to develop well-rounded individuals with a broad knowledge base, critical thinking abilities, and creativity.

2. Universalization of Early Childhood Care and Education: The policy emphasizes the importance of early childhood care and education, aiming to provide quality early childhood education for children in the age group of 3 to 6 years. It recognizes the crucial role of foundational education in a child's development (Siraj-Blatchford et al., 2008).

3. Foundational Literacy and Numeracy: The NEP 2020 places significant emphasis on foundational literacy and numeracy skills. It aims to ensure that every child achieves basic proficiency in reading, writing, and mathematics by Grade 3.

4. Flexibility in Choice of Subjects: The policy provides flexibility in choosing subjects and promotes a multidisciplinary approach at the secondary level. It enables students to select subjects based on their interests and aptitudes, fostering a holistic development and facilitating a seamless transition to higher education (A Strong Focus on Vocational Education in NEP 2020, n.d.; Markowitsch & Hefler, 2019).

5. Technology Integration: The NEP 2020 recognizes the importance of technology in education and promotes its effective integration. It aims to leverage technology for improving teaching and learning processes, online education, and the development of digital infrastructure.

6. Vocational Education and Skill Development: The policy emphasizes the integration of vocational education and skill development into the mainstream curriculum. It aims to provide students with practical skills and experiences that enhance their employability and entrepreneurship capabilities.

7. Teacher Training and Professional Development: The NEP 2020 focuses on the continuous professional development of teachers, enhancing their skills and competencies. It emphasizes the use of technology for teacher training and encourages the establishment of dedicated teacher education institutions (Need for Compulsory Teacher Education Courses for Higher Education Faculty for Effective Implementation of NEP 2020 - ProQuest, n.d.).

8. Higher Education Reforms: The policy envisions significant reforms in higher education, including a flexible and multidisciplinary approach, the establishment of a National Research Foundation, promotion of research and innovation, and the internationalization of higher education (Gupta et al., 2021).

9. Promotion of Indian Languages: The NEP 2020 emphasizes the promotion and preservation of Indian languages, recognizing the importance of linguistic diversity and multilingualism in education. It encourages the teaching and learning of local languages alongside regional and international languages (Aithal & Aithal, 2020).

10. Regulatory Framework: The policy proposes the establishment of a single overarching regulatory body for higher education, called the Higher Education Commission of India (HECI), to replace existing regulatory bodies. It aims to streamline and strengthen the regulatory framework for higher education.

The NEP 2020 aims to transform the education system in India, making it more inclusive, flexible, and relevant to the needs of the 21st century. It seeks to promote quality education, innovation, and research, preparing students to meet the challenges of a rapidly changing world.

### Methodology

To understand the various bottlenecks in implementation process brainstorming was undertaken with managements and Principals of few institutions came up with their opinions. The various pillars of NEP 2020 were discussed so that all understand the NEP requirements in detail. The inputs from stakeholders on the major points were included and a google form was created compiling all the 62 questions under the eight different sections. The sections included Multi-disciplinary approach, Flexibility and CBCS, Skill Development, Research & innovation, Faculty development and continuous learning, Industry academia collaboration and use of technology. This google form was distributed randomly in various social media groups of the authors to solicit their opinion. The respondents were from various states of the nation, had a varied experience ranging from 17 years to 42 years and occupied various positions from Associate Professor to Professor, Dean, Vice Principal, Principal and Controller of Examination. The analysis of the results are being discussed in the results and discussion column below.

### Results and Discussion

The respondents were from various states of the nation, had a varied experience ranging from 17 years to 42 years and occupied various positions from Associate Professor to Professor, Dean, Vice Principal and Principal and are from affiliated, autonomous institutions, State Public University, State Private University and deemed to be University with 80% of them being Doctorates. The respondents belonged majorly from the southern states of Maharashtra, Karnataka, Telangana, Tamilnadu and few from Delhi and Jammu and Kashmir.

The inferences drawn indicate that over 57% of the respondent's institutions have not gone for NAAC accreditation, and they were aware of the various initiatives of the nation viz. National Research Foundation and National Credit Framework. As it's too early to decide 71% of the respondents have not taken a call on the type of university they wish to become in coming years (Unitary or Cluster university) but 50 % of respondents have shown interest to be a research intensive university with 37.5% being focused on Teaching intensive university.

**Multidisciplinary Approach:** NEP 2020 encourages a multidisciplinary approach to education, including engineering programs. It emphasizes the integration of different

disciplines and the development of well-rounded individuals with a broad knowledge base. Standalone UG engineering institutions can leverage this aspect to offer interdisciplinary courses, allowing students to explore diverse fields and develop a comprehensive understanding of the interconnected nature of knowledge.

Majority of the institutions represented were offering single program (57%) and only 43% of institutions were offering more than one program. To be multi-disciplinary the institutions plan to add Management Program (25%) but half of the institutions wish to open up new Technical programs like BE, B.Tech. and 41% have opted for humanities. These programs shall be regulated by AICTE, PCI and mostly affiliated to the universities. To offer new programs nearly 70% of institutions need added built up space with new class rooms, ICT facilities and laboratories. Due to the varied nature of programs the respondents are not very convinced about the economic viability of the new programs they will be offering in due course of time.

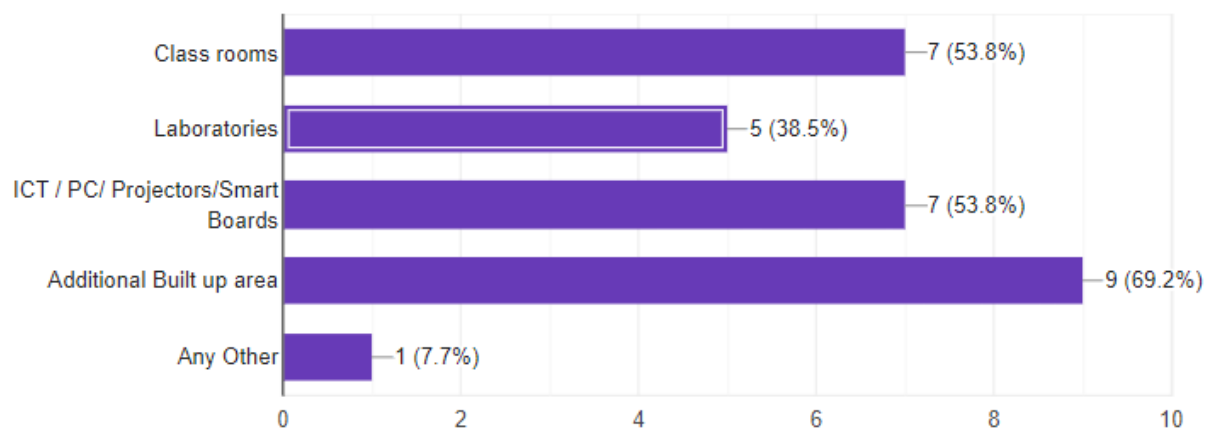


Figure 1 Need for infrastructure to start new programs by institutions

**Flexibility and Choice-based Credit System:** NEP 2020 promotes flexibility in curriculum design and the adoption of a choice-based credit system. Standalone UG engineering institutions can benefit from this by offering a more flexible range of courses, allowing students to customize their learning based on their interests and career goals. This facilitates a broader education experience and encourages students to pursue subjects beyond the core engineering disciplines.

Over 87% of the respondent's institutions are offering CBCS ie Choice Based Credit System as mandated by UGC and mostly the institutions responded were engineering institution with few being from the commerce and management streams. CBCS is being offered right from 2015 and institutions have over the years switched to CBCS. As a part of CBCS open electives are being offered by 72% of the institutions and the total credits for the elective subjects is ranging from 6 to 15 credits. Many institutions in line of NEP 2020 have already stated offering minor/major program and honors program.

**Emphasis on Skill Development:** NEP 2020 recognizes the importance of skill development alongside academic learning. Standalone UG engineering institutions can align their programs with the skill development initiatives outlined in NEP 2020, focusing on

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practical training, industry collaborations, and the development of transferable skills such as communication, problem-solving, and teamwork. This prepares students to be job-ready and adaptable in a rapidly evolving professional landscape. All the institutions have introduced skill training to their students clearly highlights the importance of NEP and the future holds for skilled professionals.

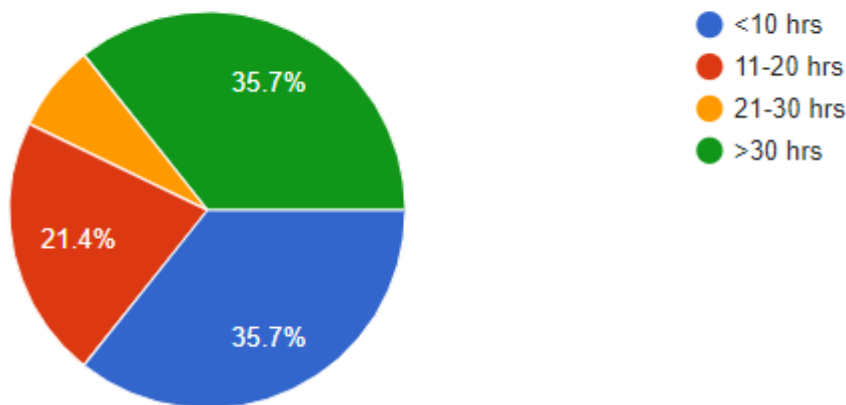


Figure 2 No. of hours of skill training provided to students

The skill training provided is mainly in the technology domain@80% related to IT fields and are long duration training program of over 30 hours’ duration. Ability Enhancement Courses AEC are being offered as they have been incorporated in the curriculum but still about a third of institutions are yet to offer the same for want of guidelines from the universities. The awareness on Indian Knowledge System (IKS) is growing /catching up and it shall be wide spread in years to follow.

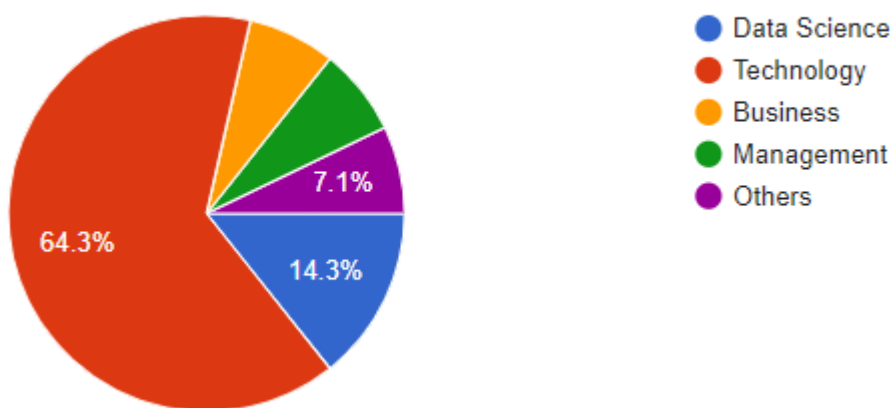


Figure 3 Skill Training Domains

**Research and Innovation:** NEP 2020 emphasizes the promotion of research and innovation in higher education, including engineering. Standalone UG engineering institutions

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can create a conducive environment for research and innovation by encouraging faculty and students to undertake research projects, collaborate with industries, and engage in entrepreneurial activities. This fosters a culture of innovation, contributes to knowledge creation, and enhances the quality of engineering education.

Majority of the institutions have already brainstormed and come out with a well-documented research policy and are providing financial support to teachers and students to undertake research and publish their findings. Institutions have initiated various measures to further research and IPR activities by entering into collaborations (MoUs), providing training and development, sponsoring faculty members for doctoral program and even incentivizing research and subsequent publication.

**Faculty Development and Continuous Learning:** NEP 2020 emphasizes the importance of faculty development and continuous learning. Standalone UG engineering institutions can invest in faculty training programs, workshops, and collaborations with other institutions to enhance the teaching and research capabilities of their faculty members. This ensures the delivery of high-quality education and promotes a vibrant academic community.

As observed in the case of research, the institutions have drafted clear and written policies for encouraging faculty members to attend conferences, FDPs, STTPs and workshops organized by various other institutions within or outside their respective states. Various measures of support are extended be it through non-financial support (granting duty leaves to cover their absence from work) financial support (covering part or the entire cost involved) or even both. Hence the institutions are encouraging the faculty members to take up SWAYAM courses many of them being recognized as FDP by AICTE/UGC.

**Industry-Academia Collaboration:** NEP 2020 encourages closer collaboration between academia and industry. Standalone UG engineering institutions can establish stronger ties with industries, enabling students to gain practical exposure through internships, industry projects, and guest lectures. This enhances the relevance of engineering education, bridges the gap between academia and the industry, and enhances students' employability.

Institutions lately have opened up to their interactions with the industries and over 80 % of respondents have claimed that their institutions have a functional IIC. The institutions duly recognizing the importance of industry and its personnel have appointed them on their Board of Studies/ Departmental Advisory Boards and PAQIC Program assessment and Quality Assurance Cell.

**Use of Technology:** NEP 2020 promotes the integration of technology in education. Standalone UG engineering institutions can leverage technological tools and platforms to enhance teaching methodologies, facilitate online learning, and create virtual labs for practical training. This ensures that students have access to the latest tools and resources, preparing them for the technologically-driven engineering landscape.

Over half of the institutions have set up virtual labs for the benefit of the students. Over 1/3 of them have shown keenness to collaborate with IIT Bombay for the V Lab project (Nodal Centre). The awareness of IIT Spoken Tutorial is on the rise to learn about the new technologies in emerging areas. Digital recording studio to encourage online learning (blended learning) is being established by the intuitions. Similarly, procurement of smart boards/ interactive panels is being undertaken and the teaching content is also being developed. The UGC Regulations, 2021 permit up to 40% of the total courses being offered in a particular

programme in a semester through the Online Learning Courses offered through the SWAYAM platform and/or other State Level Common Platforms which can be developed in due course with the participation of different Universities/ HEIs.

The various courses being planned to be implemented by the institution include E&C courses, design thinking, AI/ML, Ability Enhancement courses, open electives as the affiliating universities are following the guidelines of UGC and are encouraging OEC in curriculum as a part of implementing OBE.

#### Acknowledgment (Heading 5)

The authors would like to gratefully acknowledge the financial support offered by Dr. D Y Patil Prathisthan's College of Engineering, Kolhapur towards the conference. We wish to place on record the deep sense of appreciation to all the respondents who took time to go through the exhaustive questionnaire and fill the same.

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## AN EMPIRICAL STUDY ON THE SECTORAL ANALYSIS AND THE INVESTOR'S PERCEPTION TOWARDS HEALTH INSURANCE IN KOLHAPUR DISTRICT

Esha M. Potdar<sup>\*1</sup>Harshad S. Chougule<sup>\*2</sup><sup>\*1</sup> Student, MBA ,Chhatrapati Shahu Institute Of Business Education And Research Kolhapur, India<sup>\*2</sup> Student, PGDM, N.L. Dalmia Institute Of Management Studies And Research Mumbai, India

### ABSTRACT

This study investigates the determinants of health insurance purchase decisions among the public in Kolhapur District, assessing factors influencing their choices and gauging customer satisfaction levels. Utilizing both primary data collected through questionnaires and secondary data from sources like the internet and journals, the research, based on a sample size of 108 participants chosen through convenience sampling, reveals that while growing health awareness and escalating healthcare costs have become prominent, a significant portion of the population in the region has not yet adopted health insurance. These findings offer valuable insights for insurance providers and policymakers aiming to enhance health insurance coverage in the area.

**Keywords:** Cashless Facility, Claim, Insurer

### INTRODUCTION

Insurance, a contractual agreement mitigating risks through premium payments, has garnered significant attention in India's financial landscape. Health insurance, a vital subset, addresses medical and surgical costs, either paying providers directly or reimbursing policyholders. The evolution of India's health insurance landscape reflects a shift from traditional Mediciclaim Policies to diverse offerings, including family floater plans, critical illness coverage, and more.

#### **Purpose of Health Insurance:**

- **Medication Affordability:** Covers prescribed medications, making essential drugs more accessible and affordable.
- **Chronic Disease Management:** Supports ongoing care and management for individuals with chronic health conditions, improving their quality of life.
- **Maternity and Reproductive Health Support:** Eases the financial strain associated with maternity care and reproductive health services.
- **Mental Health Inclusion:** Recognizes the importance of mental well-being by providing coverage for mental health services.
- **Legal Compliance:** In some regions, health insurance is mandatory, ensuring adherence to healthcare regulations.
- **Risk Pooling Principle:** Shares healthcare costs across a broader group, preventing individuals from bearing the full financial burden alone.

#### **Need for Health Insurance:**

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- **Changing Lifestyles:** Sedentary habits, poor diet, and stress highlight the need for health insurance as Indians face increased susceptibility to illnesses.
- **Rise in Non-Communicable Diseases:** Lifestyle diseases like high blood pressure and obesity, once rare, are now commonplace, necessitating comprehensive health coverage.
- **Escalating Healthcare Costs:** Advanced medical treatments, though effective, incur high costs, limiting accessibility. Health insurance becomes crucial to bridge this affordability gap.
- **Financial Burden:** Indirect costs, constituting a significant portion of treatment expenses, coupled with the lack of financial planning, amplify the financial burden during health crises.

### **Classification of Health Insurance Plans:**

- **Individual Health Insurance:** Coverage for an individual and their family with distinct sums insured for each member.
- **Family Floater Health Insurance:** Economical plans covering an entire family under a single policy with a shared sum insured.
- **Senior Citizens Health Insurance:** Tailored for the elderly, addressing their specific medical needs with additional benefits.
- **Critical Illness Insurance:** Targeted coverage for specific severe illnesses, offering lump-sum payouts upon diagnosis.
- **Group Health Insurance:** Affordable plans for a group of individuals, commonly provided by employers as an employee benefit.

### **Benefits of Health Insurance:**

- **Financial Protection:** Health insurance provides financial coverage for medical expenses, protecting individuals and families from the high costs of healthcare.
- **Access to Quality Healthcare:** Insurance often grants access to a network of healthcare providers, ensuring timely and quality medical services.
- **Preventive Care:** Many health insurance plans cover preventive services, encouraging regular check-ups and early detection of potential health issues.
- **Emergency Care:** Health insurance helps cover the expenses of unexpected medical emergencies, offering peace of mind during crises.
- **Prescription Medication Coverage:** Plans often include coverage for prescribed medications, making essential drugs more affordable.

## **REVIEW OF LITERATURE**

In Kun Reuther's 1979 perspective, insurance's true significance emerges in the face of catastrophic events like home destruction or the loss of a family provider. Despite its critical role, selling insurance has been a persistent challenge. The intangible and complex nature of



the product, combined with the psychological resistance to contemplating worst-case scenarios, makes conveying its value intricate. Overcoming these hurdles requires not only explaining the practical benefits but also addressing the emotional barriers that hinder embracing the vital role insurance plays in providing financial security during life's most challenging moments. The insurance industry continually strives to strike a balance between practical necessity and navigating the intricacies of human emotion and perception.

Majumdar's 2004 study highlighted the growth potential of health insurance in India, emphasizing the crucial role of actuaries in product design and premium rating. The group health insurance sector operated on a "no loss/no profit" basis, prioritizing accommodation-based coverage for valued customers. This approach aimed to provide essential health protection while maintaining financial sustainability, showcasing the pivotal role of actuaries in achieving a balanced and customer-centric health insurance landscape in India.

Reinhardt (1998) emphasizes an additional goal of global health reform: to keep healthcare accountable for resource use and service delivery quality. This goes beyond health outcomes, focusing on efficiency, minimizing waste, and ensuring a positive, patient-centric healthcare experience. The perspective underscores the need for a holistic approach that balances effectiveness with patient satisfaction and responsiveness to community needs.

Ahuja and Narang (2005) highlighted the potential for improvement in health insurance for low-income individuals in India. They advocated for enhancements through incentives and regulatory oversight. The "appropriate encouragements" likely refer to financial incentives, while regulatory authority aims to ensure fairness and standards in health insurance practices. This dual approach, they argued, could drive positive developments and better address the healthcare needs of the economically disadvantaged.

## METHODOLOGY

The approach used for the report “**An Empirical Study On The Sectoral Analysis And The Investor’s Perception Towards Health Insurance In Kolhapur District**” involves collecting primary data through a questionnaire from 108 respondents in the district. A convenience sampling method is used. The study focuses on understanding factors influencing health insurance purchase decisions and assessing customer satisfaction. Secondary data from sources like the internet and journals provides background information. The study aims to uncover factors influencing health insurance decisions and customer satisfaction in Kolhapur District, while considering potential limitations and evolving customer preferences.

## OBJECTIVE OF THE STUDY

The study program has got the following objective:

- To understand the factors influencing the purchase decision of health insurance policy in Kolhapur District.

## ANALYSIS AND INTERPRETATION OF DATA

### Section 1: Demographics

#### 1) Gender:

Sr. No.	Gender	Frequency	Percentage
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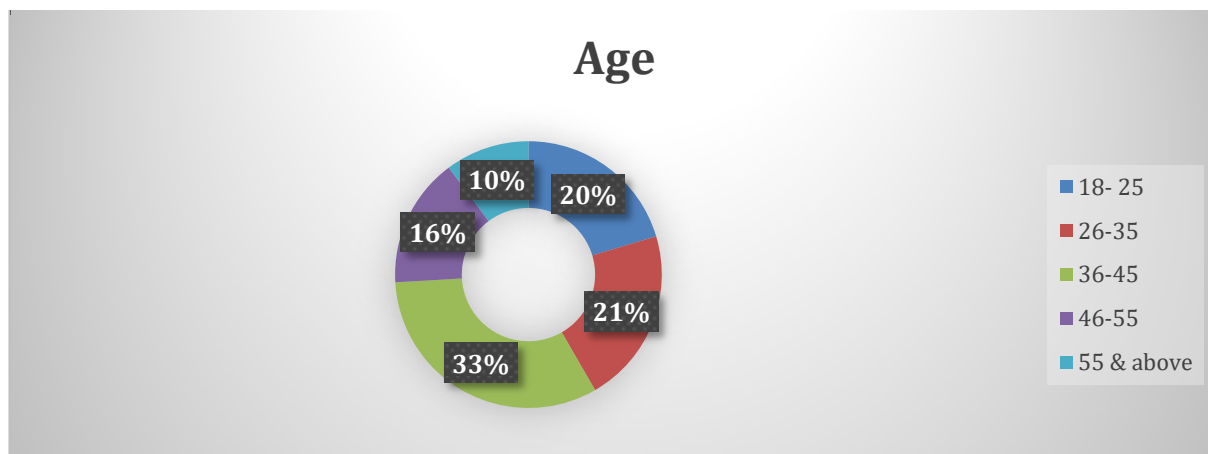
1	Male	57	52.8
2	Female	51	47.2
	<b>Total</b>	<b>108</b>	<b>100</b>

According to the survey, 108 replies, the gender distribution is as follows:

- Males were 52.8% of responses i.e. (around 57)
- 51 responders, or 47.2%, were female.

2) Age:

Sr. No.	Age	Frequency	Percent
1	18- 25	22	20.4
2	26-35	23	21.3
3	36-45	35	32.4
4	46-55	17	15.7
5	55 & above	11	10.2
	<b>Total</b>	<b>108</b>	<b>100</b>

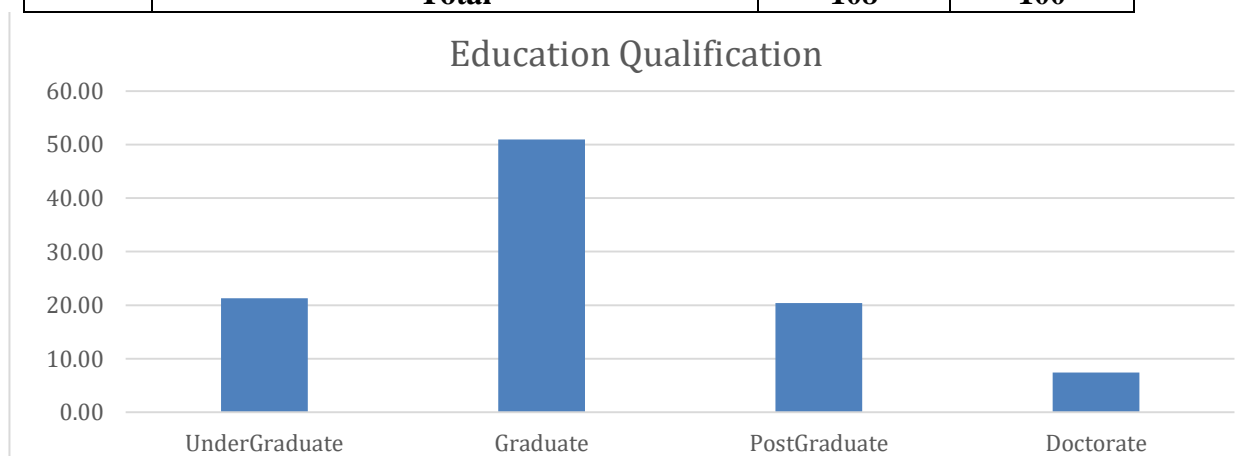


here's the age distribution breakdown of the 108 survey respondents:

1. **18–25 (20.4%)**: This age group represents young adults, aged 18 to 25, making the transition from adolescence to adulthood. They could be pursuing higher education, starting their careers, exploring personal interests, and making pivotal life decisions.
2. **26-35 (21.3%)**: Respondents in this group, slightly older than the 18–25 bracket, are in the early stages of adulthood. Many are embarking on their professional journeys, seeking financial independence, and making significant life choices, such as starting families or pursuing higher education.
3. **36-45 (32.4%)**: The largest segment among the respondents, those aged 36-45, constitutes a significant portion. People in this age group typically have established careers, may have families, and are actively managing various aspects of their personal and professional lives. They carry numerous responsibilities and experience
4. **46-55 (15.7%)**: The 46-55 age group makes up 15.7% of the total respondents. This segment usually comprises individuals in the later stages of their careers, possibly holding senior or managerial positions. They likely possess substantial professional experience and are either nearing retirement or contemplating new life directions.
5. **56 and beyond (10.2%)**: This category encompasses individuals aged 56 and over, accounting for 10.2% of the entire sample. It typically includes retirees, seniors, and those with a wealth of life experience, knowledge, and wisdom. They may have distinct objectives and perspectives compared to younger age groups.

**3) Education Qualification:**

Sr. No.	Education Qualification	Frequency	Percent
1	Undergraduate	23	21.30
2	Graduate	55	50.93
3	Postgraduate	22	20.37
4	Doctorate	8	7.41
	<b>Total</b>	<b>108</b>	<b>100</b>

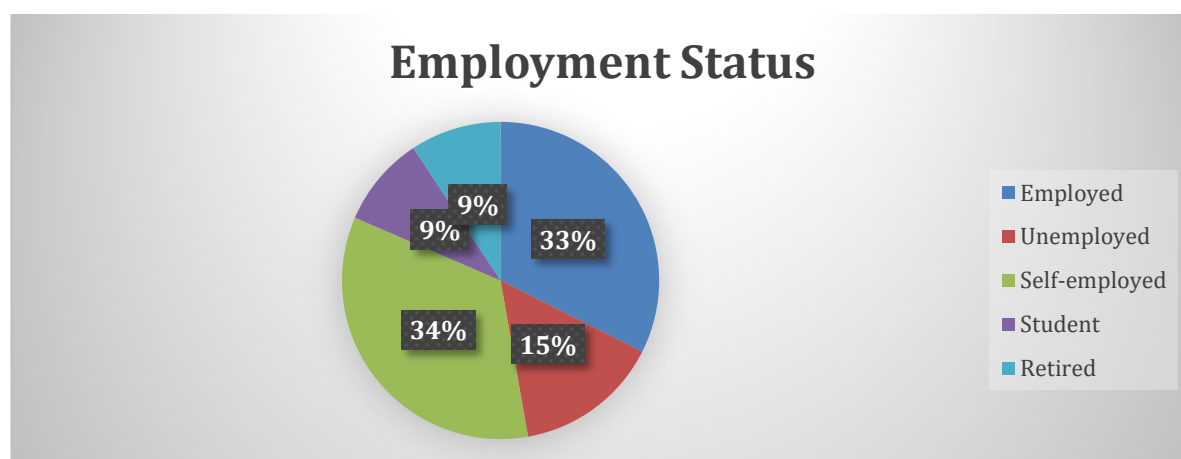


Following is a summary of the conduct surveys respondents' educational backgrounds:

1. **Undergraduate:** 21.3% of the participants (23 responses) have finished their undergraduate education, suggesting that they have earned or are seeking a bachelor's degree.
2. **Graduate:** The majority, or 50.9% of respondents (55 responses), have finished their undergraduate degrees and are currently pursuing additional degrees, such as master's degrees or professional certifications.
3. **Postgraduate:** 20.4% (22 responses) of the participants have finished graduate school and have earned postgraduate credentials like master's degrees, certificates, or diplomas.
4. **Doctorate:** The smallest group, 7.4% (8 responses), consists of people who have earned a doctoral degree, the highest level of academic proficiency.

#### 4) Employment Status:

Sr. No.	Employment Status	Frequency	Percent
1	Employed	35	32.3
2	Unemployed	16	14.8
3	Self-employed	37	34.3
4	Student	10	9.3
5	Retired	10	9.3
	<b>Total</b>	<b>108</b>	<b>100</b>



Following is a summary of a survey respondents' employment status:

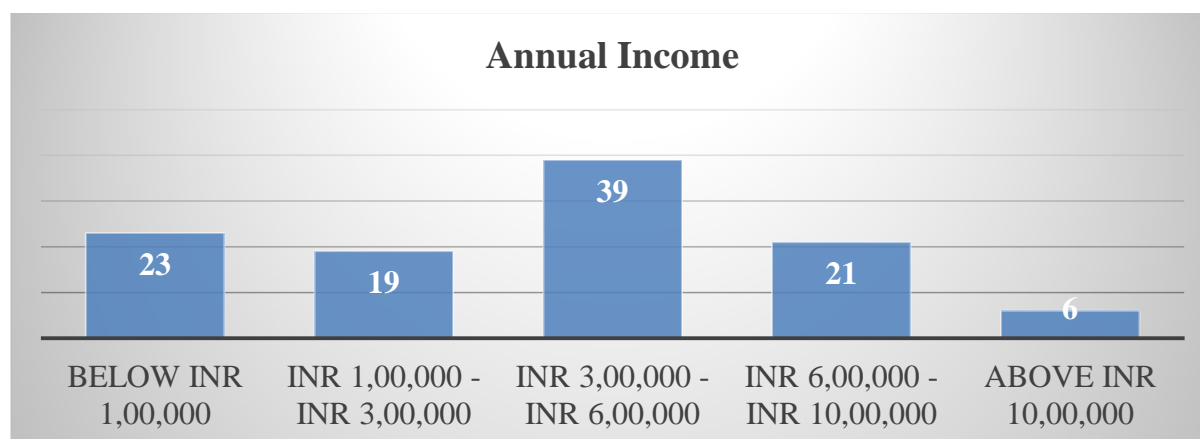
1. **Employed:** Of the participants, 32.4% (35 responses) said they were currently employed, which means they have a job and are actively working.
2. **Unemployed:** 14.8% (16 replies) of the respondents said that they were unemployed, indicating that they are looking for work right now.
3. **Self-employed:** The majority of respondents—34.3%, or 37 responses as self-employed. These people are independent contractors who don't work for an employer.
4. **Student:** Of the participants, 9.3% (10 responses) identified themselves as students,

meaning they are currently pursuing their education and do not hold a full-time job.

5. **Retired:** Additionally, 9.3% (10 responses) identified themselves as retired, which means that they have stopped working because of reaching the end of their careers or a specific age. This summary gives a quick overview of the survey respondents' employment status distribution and lists the various job and non-employment categories that respondents identified themselves with.

#### 5) Annual Income:

Sr. No.	Annual Income	Frequency	Percent
1	Below INR 1,00,000	23	21.3
2	INR 1,00,000 - INR 3,00,000	19	17.6
3	INR 3,00,000 - INR 6,00,000	39	36.1
4	INR 6,00,000 - INR 10,00,000	21	19.4
5	Above INR 10,00,000	6	5.6
	<b>Total</b>	<b>108</b>	<b>100</b>



The annual income distribution of the survey respondents summarized as follows:

1. **Below INR 1,00,000:** Of the participants, 21.3% (23 replies) reported having an annual income of less than INR 1,00,000. This range of income points to a lower income level.
2. **INR 1,00,000 - 3,00,000:** Of the respondents, 17.6% (19 replies) reported having a yearly income of INR 1,00,000 - 3,00,000. This range reflects a middle-class income.
3. **INR 3,00,000 - 6,00,000:** The largest group, which made up 36.1% of the respondents (39 responses), reported having an annual income between INR 3,00,000 and 6,00,000. According to this range, the majority of the participants are likely to be middle-class.
4. **INR 6,00,000 - 10,00,000:** Of the respondents, 19.4% (21 replies) stated that their yearly income was in the range of INR 6,00,000 and 10,00,000. This range denotes a

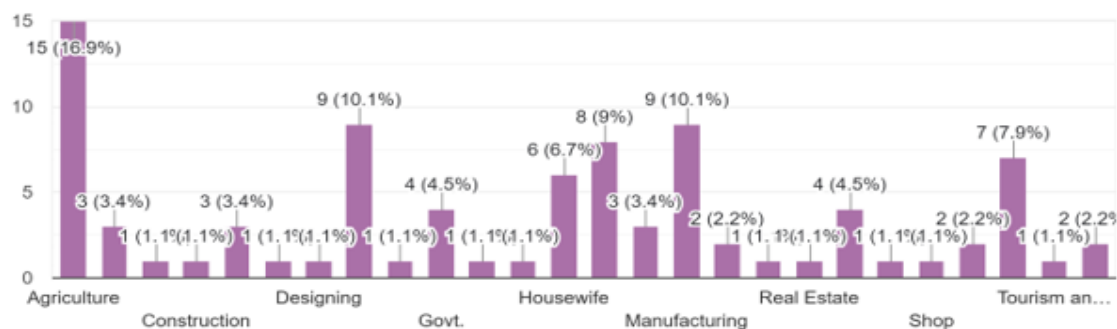
proportionate increase in income.

- Above INR 10,00,000:** The smallest group, comprising 5.6% (6 responses), stated an annual income above INR 10,00,000. This range suggests a higher income level.

## Section 2: Sectoral Analysis:

- Which sector do you primarily work in or have expertise in? (e.g., healthcare, finance, IT, manufacturing)

89 responses



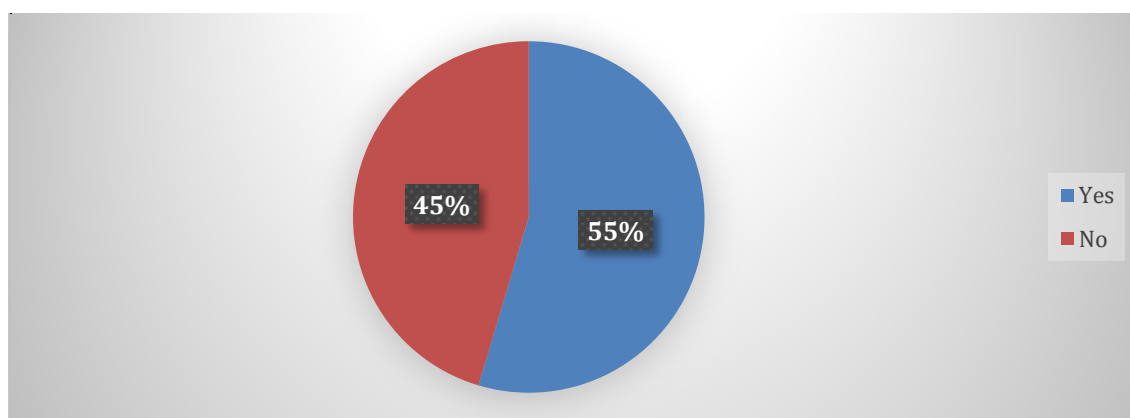
Following is a summary of the main sectors in which the survey respondents work or possess expertise:

- Agriculture:** 15 respondents (16.9%) work mostly in this industry, which includes farming, gardening, and agricultural production-related tasks.
- Construction:** One (1.1%) of the respondents indicated having experience or working in the infrastructure- and building-related industry of construction.
- Designing:** One respondent (1.1%) indicated that they had experience or had worked in the field of designing, which could encompass a variety of disciplines like fashion, interior, or graphic design.
- Government:** Four respondents (4.5%) work for the government, suggesting that they have experience working for or with governmental bodies or the public sector.
- Housewife:** Six respondents (6.7%) declared themselves to be housewives, indicating that their main focus is on handling obligations to their families and the home.
- Manufacturing:** Nine respondents (10.1%) work in this industry, which entails the production of commodities or products.
- Textile:** Seven respondents, or 7.9% of the total, work in the textile industry, which is responsible for the creation and manipulation of textiles and fabrics.
- IT:** Eight respondents (9%) have experience or employment in the IT industry, which includes software development, information technology, and related disciplines.
- Banking:** Three respondents (3.4%) work in the financial services and operations industry, which includes banking and other financial organisations.
- Consulting:** Three respondents (3.4%) work as consultants, offering knowledge and experience in a range of fields.
- Insurance:** The insurance industry employs three respondents (3.4%) and is involved in risk management and the provision of insurance services.

12. **Retail:** Four respondents (4.5%) work in the retail sector, which involves the sale of goods or services to consumers.
13. **Student:** Two respondents (2.2%) identified themselves as students, indicating their current focus on education rather than employment.
14. **Transport:** Two respondents (2.2%) work in the transportation sector, which involves the movement of goods or people from one location to another.

7) **Have you invested in health insurance schemes in India?**

Sr. No.	Respondents	Frequency	Percent
1	Yes	59	54.6
2	No	49	45.4
	<b>Total</b>	<b>108</b>	<b>100</b>



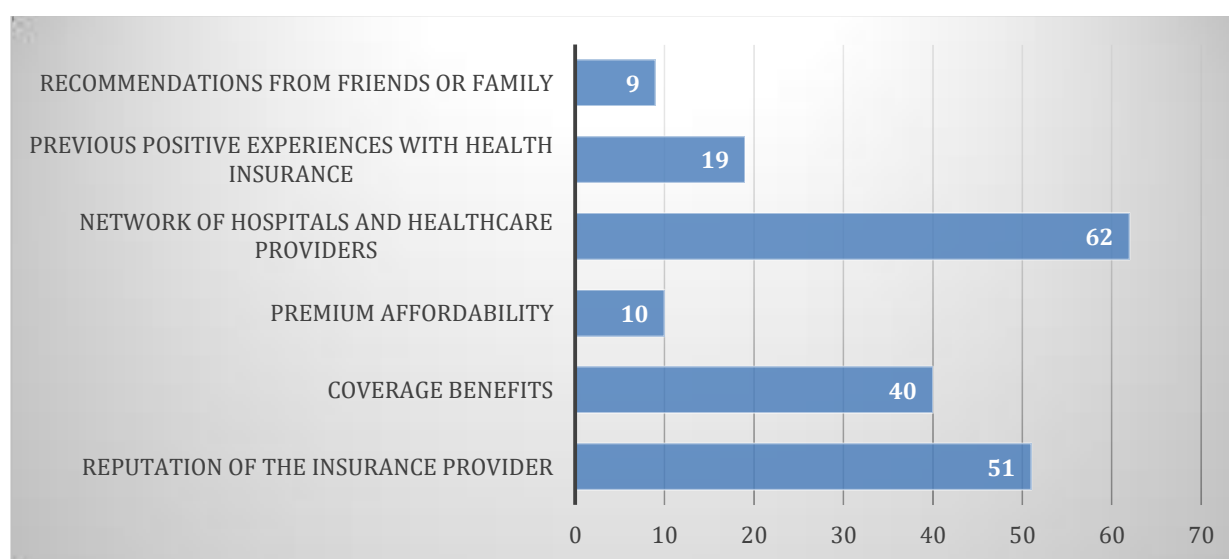
Investment in health insurance schemes in India, the results indicate the following:

1. **Yes (54.6%):** Among the total surveyed respondents, 59 individuals (54.6%) have invested in health insurance plans. This signifies a proactive approach to securing themselves and their families against current and future healthcare expenses.
2. **No (45.4%):** In contrast, 49 respondents (45.4%) have not made any investments in health insurance plans. This indicates their lack of health insurance coverage, leaving them financially responsible for all medical costs in case of illness or emergencies.

The findings underscore the significance of health insurance in providing access to quality healthcare and financial security. While a significant portion of respondents have recognized its importance and invested in health insurance, there remains a need for increased awareness and understanding of the benefits of health insurance plans in India.

### 8)What factors influenced your decision to invest in health insurance schemes?

Sr. No.	Factors	Frequency	Rank
1	Reputation of the insurance provider	51	2
2	Coverage benefits	40	3
3	Premium affordability	10	5
4	Network of hospitals and healthcare providers	62	1
5	Previous positive experiences with health insurance	19	4
6	Recommendations from friends or family	9	6



Factors that influenced respondents' decision to invest in health insurance schemes, the following factors and their corresponding percentages were reported:

1. **Reputation of the Insurance Provider (68%):** The insurance company's trustworthiness and ability to provide quality services played a significant role in 68% of respondents' decisions to buy health insurance.
2. **Coverage Benefits (53.3%):** About 53.3% of participants considered the coverage benefits offered by the health insurance plan, including hospitalization costs, pre- and post-hospitalization care, outpatient treatments, and other medical expenses covered.
3. **Premium Affordability (13.3%):** Premium affordability influenced 13.3% of respondents, ensuring that they can comfortably afford the insurance without financial strain.
4. **Network of Hospitals and Healthcare Providers (82.7%):** An extensive network of



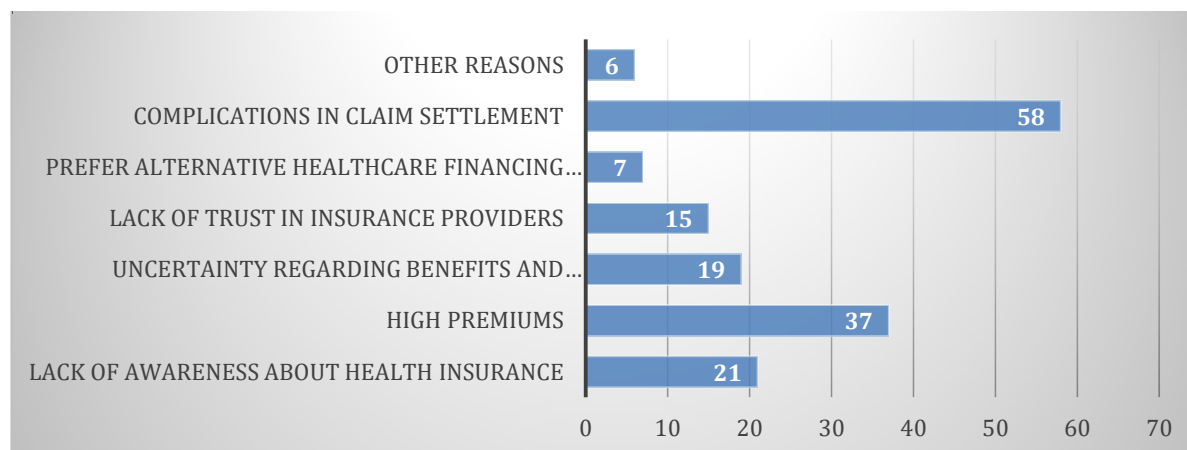
hospitals and healthcare providers influenced 82.7% of participants, as it guarantees access to preferred healthcare facilities and high-quality services.

5. **Previous Positive Experiences (25.3%):** 25.3% cited prior positive experiences with health insurance, such as timely claim settlements and excellent customer service, as factors that built trust and confidence.
6. **Recommendations from Friends or Family (12%):** Recommendations from trusted friends or family members influenced 12% of respondents, providing valuable insights into specific insurance companies or plans.

These findings highlight the diverse range of factors that shape decisions to invest in health insurance, emphasizing the importance of reputation, coverage benefits, affordability, network accessibility, positive experiences, and personal recommendations.

### 9) What are the reasons for not investing in health insurance schemes?

Sr. No.	Reasons	Frequency	Rank
1	Lack of awareness about health insurance	21	3
2	High premiums	37	2
3	Uncertainty regarding benefits and coverage	19	4
4	Lack of trust in insurance providers	15	5
5	Prefer alternative healthcare financing options	7	6
6	Complications in claim settlement	58	1
7	Other reasons	6	7



In the survey conducted with respondents who have not invested in health insurance schemes, the reasons for their decision can be summarized as follows:

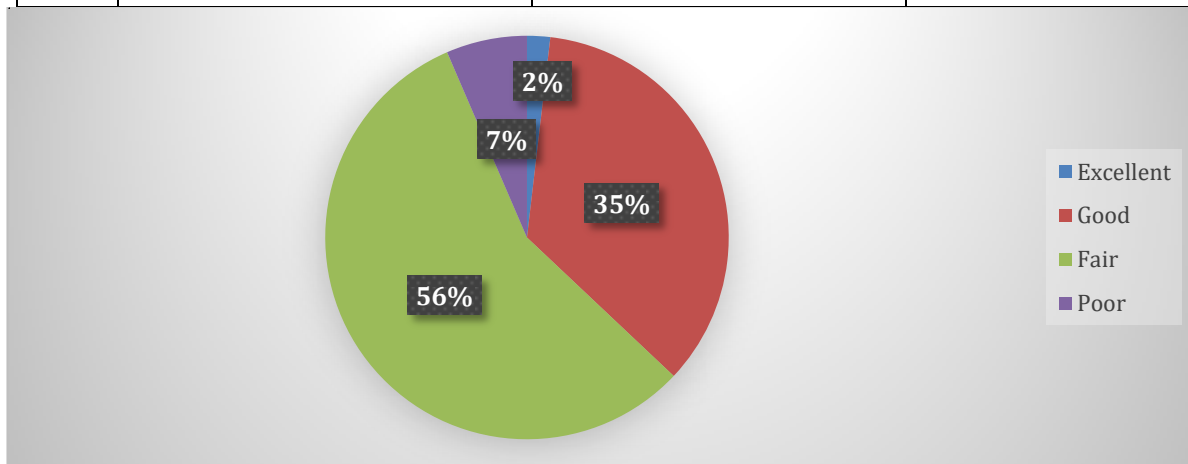
1. **Lack of Awareness (23.3%):** 21 respondents (23.3%) mentioned a lack of understanding about health insurance as a factor, indicating a need for increased

- awareness and comprehension.
2. **High Premiums (41.1%)**: 37 respondents (41.1%) considered high premiums a deterrent, viewing insurance costs as prohibitive.
  3. **Uncertainty About Benefits (21.1%)**: 19 respondents (21.1%) expressed uncertainty about health insurance benefits and coverage, possibly due to complex policy terms.
  4. **Lack of Trust (16.7%)**: 15 respondents (16.7%) lacked trust in insurance providers, likely stemming from past negative experiences.
  5. **Preference for Alternatives (7.8%)**: Seven respondents (7.8%) preferred alternative healthcare financing options over traditional health insurance.
  6. **Claim Settlement Complications (64.4%)**: A significant majority, 58 respondents (64.4%), cited difficulties in claim settlement, such as complex processes, delays, or concerns about insurer responsiveness, as their primary reason.
  7. **Other Reasons**: A small number of respondents mentioned additional, unspecified factors, including cultural beliefs, individual circumstances, eligibility issues, or general dissatisfaction with the healthcare system.

### Section 3: Investor's Perception

#### 10) How would you rate your understanding of health insurance schemes in India?

Sr. No.	Response	No. of Respondents	Percentage
1	Excellent	2	1.8
2	Good	38	35.2
3	Fair	61	56.5
4	Poor	7	6.5
	Total	108	100



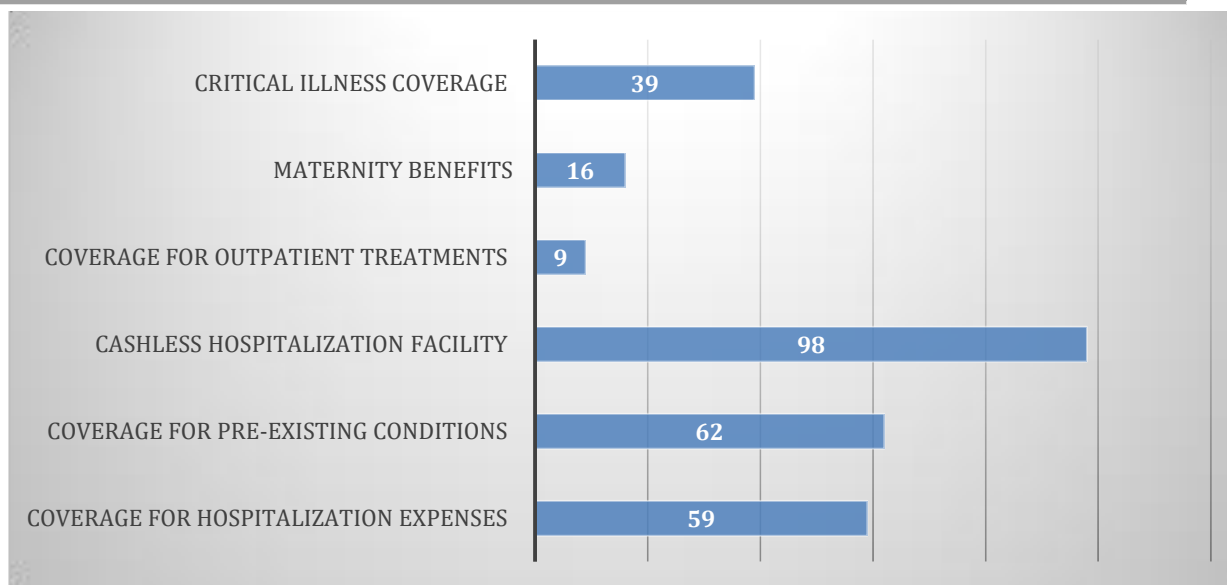
The following evaluations were obtained from a survey of 108 respondents about their knowledge about Indian health insurance programmes:

1. **Excellent (1.9%)**: Two respondents indicated an excellent understanding of health insurance plans, showcasing a high level of familiarity and comprehension.
2. **Good (35.2%)**: 38 respondents reported a good understanding, signifying a basic knowledge of health insurance plans and their core concepts.
3. **Fair (56.5%)**: The majority, 61 respondents, had a fair understanding, suggesting moderate awareness with room for improvement.
4. **Poor (6.5%)**: Seven respondents rated their understanding as poor, indicating weak awareness or ignorance of Indian health insurance programs, potentially requiring significant education.

The analysis reveals that nearly 91% of respondents had at least a fair understanding of Indian health insurance programs, with a substantial portion considering their comprehension as good. However, a small group (6.5%) still expressed a poor understanding, emphasizing the need for enhanced knowledge and education in this domain.

### 11) What are the main benefits you expect from a health insurance scheme?

Sr. No.	Benefits	Frequency	Rank
1	Coverage for Hospitalization Expenses	59	3
2	Coverage for Pre-existing Conditions	62	2
3	Cashless Hospitalization Facility	98	1
4	Coverage for Outpatient Treatments	9	6
5	Maternity Benefits	16	5
6	Critical Illness Coverage	39	4



Let's analyse each benefit and its corresponding percentage:

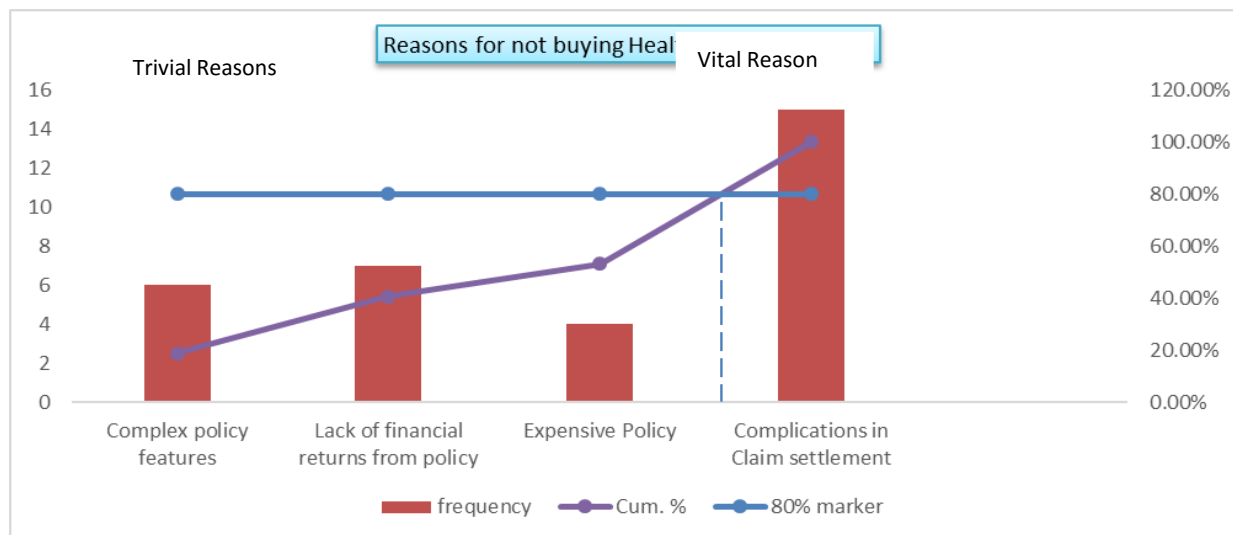
1. **Hospitalization Expense Coverage (54.6%):** More than half of respondents value health insurance for covering hospitalization expenses, providing financial security for costly hospital stays.
2. **Coverage for Pre-existing Conditions (57.4%):** A substantial majority prioritize pre-existing condition coverage, ensuring that individuals with existing health conditions receive necessary care without being denied coverage.
3. **Cashless Hospitalization Facility (90.7%):** The vast majority appreciate the convenience of cashless hospitalization, allowing medical care without upfront payments, as the insurer settles the bills directly.
4. **Coverage for Outpatient Treatments (8.3%):** A smaller group recognizes the importance of outpatient treatment coverage, which includes services outside hospital settings, making routine medical care budget-friendly.
5. **Maternity Benefits (14.8%):** A minority finds maternity benefits crucial, aiding in covering pregnancy and childbirth expenses, including prenatal, labor, postpartum, and newborn care.
6. **Critical Illness Coverage (36.1%):** Many value critical illness coverage, providing financial support in case of severe illnesses like cancer or heart disease, helping manage the high costs of treatment and recovery.

### Reasons for not buying Health Insurance

Figure 1 is a Pareto chart illustrating the factors that influenced respondents not to buy health insurance. The chart highlights the primary reasons for their decision. It uses a dual-axis system: the right vertical axis shows percentage divisions, while the left vertical axis displays the count of each factor. Following the Pareto principle, the chart reveals that 20% of

the factors are accountable for 80% of the reasons behind the decision not to purchase health insurance.

**Figure 1: Reasons for not buying Health Insurance**



The graphic highlights that "Complications in claim settlement" are the primary reason people avoid buying health insurance. Other factors like low financial returns, complex policy terms, and high costs are less significant. This underscores the need for insurance companies to improve claim settlement, transparency, and simplifying processes.

New guidelines from IRDAI mean Third Party Administrators (TPAs) can't independently approve claims. They now need insurer approval, causing longer processing times. Companies with in-house claim resolution processes have a competitive advantage.

## FINDINGS

### 1. Improve Reputation:

- Prioritize high-quality services and positive client relationships.
- Uphold transparency, dependability, and trustworthiness.

### 2. Optimize Coverage Benefits:

- Regularly assess and enhance coverage benefits to meet evolving healthcare needs.
- Include comprehensive coverage for hospital costs, pre- and post-hospitalization care, outpatient therapies, diagnostics, and preventive care.

### 3. Ensure Premium Affordability:

- Offer a variety of premium options to cater to different income levels.
- Provide flexible payment alternatives, demographic-specific discounts, and cost-effective policy choices.

### 4. Expand Network of Healthcare Providers:

- 
- Focus on growing a broad network of hospitals, clinics, and healthcare providers.
  - Ensure policyholders have access to quality healthcare services without financial strain.
- 5. Improve Claim Settlement Process:**
- Simplify and streamline claim-processing procedures for transparent and quick settlements.
  - Utilize technology to enhance efficiency and provide clear communication to customers.
- 6. Educate and Raise Awareness:**
- Fund educational programs and awareness campaigns to highlight the value and benefits of health insurance.
  - Help individuals understand how to select the best coverage for their needs.
- 7. Foster Customer Relationships and Trust:**
- Prioritize good customer service and quick response to inquiries and complaints.
  - Maintain clarity in policy terms and conditions and establish effective grievance redressal procedures.
- 8. Leverage Digital Technology:**
- Utilize digital tools for claims processing, mobile apps, and online portals.
  - Enhance ease of use, accessibility, and overall consumer satisfaction through digital advancements.
- 9. Collaborate with Employers and Government:**
- Work with employers to offer group health insurance coverage for employees.
  - Collaborate with government initiatives to enhance the impact, cost, and accessibility of health insurance.
- 10. Continued Market Research and Innovation:**
- Stay informed about consumer preferences, market trends, and healthcare demands.
  - Launch new products and features based on market research and industry advancements.

## CONCLUSION

India's health insurance sector holds significant growth potential, but innovation in products and services is essential. The survey indicates that many Indians recognize the value of health insurance and have enrolled in plans, driven by factors like the insurer's reputation, coverage benefits, and a wide network of healthcare providers. However, some individuals have chosen not to purchase health insurance due to reasons such as lack of awareness, high premiums, doubts about coverage, and trust issues. To address this, there's a need for extensive awareness campaigns, pricing adjustments, policy clarity, and improved trust in insurers. While most respondents had a fair understanding of health insurance, a segment lacked comprehension, indicating the need for increased education. In conclusion, promoting awareness, affordable premiums, transparent claims processes, and trust-building are vital to

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encourage more people to invest in health insurance, ensuring financial security and access to quality healthcare.

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## A Comparative Analysis of Net Fiscal Deficit for Development Before and After the New Economic Policy

Ms. Meenakshi Sharma<sup>\*1</sup>, Ms. Trupti Patil<sup>\*2</sup>

<sup>\*1</sup> Student, Chhatrapati Shahu Institute of Business Education & Research, CSIBER, Kolhapur, Maharashtra State, India, meenakshisharma0002@gmail.com

<sup>\*2</sup> Asst. Prof., Chhatrapati Shahu Institute of Business Education & Research, CSIBER, Kolhapur, Maharashtra State, India

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### Abstract

“How far has the fiscal deficit been used for the development purpose in the country since 1981 till now?” is the main focus area of the following paper. It does so through a comparative analysis of the relation between the net fiscal deficit and the development expenditure – before and after the New Economic policy. Time period before the NEP is taken from 1981 to 1991 and for that after NEP, 1992-2023. Previous studies have relied on the data either before NEP or after it, but a comparative analysis, like this paper shows, has not been visible there. The paper uses the trend and regression analysis for measuring the relation and use of Fiscal deficit for the development expenditure. Results show that after NEP, a significant amount of fiscal deficit is used for development purposes as compared to the time frame before the reform.

**Keywords:** Net fiscal deficit, development expenditure, trend analysis, regression analysis, New Economic policy (NEP).

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### Introduction

Development expenditure (D.E.) is the expenditure of the government which helps in economic development by increasing production and real income of a country. Expenditure on economic service, expenditure on social and community services, grants to states are examples of developmental expenditures.

To finance this, the government borrows the funds from individuals, institutions and foreign investors. All the borrowings made by the government is known as Net Fiscal Deficit (N.FD.) (N. FD = Gross Fiscal deficit – lending of the central government)

### Literature Review

In India the concept of fiscal deficit was first introduced in 1991 and was defined as the sum of revenue deficit, capital expenditure less recovery of loans and other receipts. Since then, fiscal deficit has been a closely tracked parameter to measure the health of the Indian economy.

**Sonika et al. (2016), Fiscal deficits and trends in India** in the trend analysis found that the fiscal deficit of the Central Government rose sharply from 5.55% of GDP in 1980-81 to 8.13% in 1986-87 and stood at 7.61% of GDP in 1990-91. It significantly increased the capital expenditure and reduced revenue receipts. Post 1991 period had the private sector share the



burden of long-term development and contribute to capital receipts in the form of disinvestment.

**Roberto (2010), What Are the Effects of Fiscal Policy Shocks in India?** using simple structural and recursive vector auto regression (VAR) methodology (for 1996Q2-2009Q3) tries to study the effectiveness of fiscal policy in India. The fiscal data is based on the national accounts – CGA (Controller General of India) and the foreign variables are taken from IMF's World economic outlook (WEO) and 3-month LIBOR. All variables enter the VAR in natural logarithms. The time series is found to be I (1) and non-stationary. The results show that the Development spending multiplier is greater than 1, suggesting that composition of spending matters. The uncertainty surrounding this multiplier is found to be large, probably reflecting the volatility of development spending. Interestingly, the effect persists even after 16 quarters, suggesting some crowding in effects of that type of spending. On the other hand, the government spending multiplier is 0.5 crowding out the effects of private investments. Also, the tax revenue multiplier is twice as large as the current spending (development) and remains significant for 8 quarters. The findings suggest that the growth of spending may be preferable to tax rise since the latter has a significant negative effect on growth in the long-term. Despite the unique approach of using the multipliers concept, the study is limited for a very short time period of 1996-2009 only.

**Ramaprasad et al. (2016), Understanding the null-to-small association between increased macroeconomic growth and reducing child under nutrition in India: role of development expenditures and poverty alleviation,** investigate the two commonly hypothesized pathways through which macroeconomic growth is expected to reduce child under nutrition: (1) an increase in public developmental expenditure and (2) a reduction in aggregate income-poverty levels. The study is conducted for the time period of 1992-93 and 2005-06; different data sources are NHFS, RBI and government committee reports. Here, Per capita state domestic product and reduction are taken as the indicators of development. Estimation is done using multilevel logistic regression models with a log link function to exploit the latent association between economic variables at aggregate levels and under nutrition at the individual level. The model estimation is based on penalized quasi-likelihood procedures with first-order Taylor linearization. The study finds that between 1992–1993 and 2005–2006, state-level macroeconomic growth was not associated with any substantial increases in public development expenditure or substantial reductions in poverty at the aggregate level. In other words, the development expenditure is unable to help reduce child nutrition in Indian states. There are certain data constraints in the study – two distinct time periods are taken, inconsistencies and unavailability of data.

**Anantha et al. (2016), Relationship between Fiscal Deficit Composition and Economic Growth in India: A Time Series Econometric Analysis.** Study the composition of the fiscal deficit and its impact on economic growth. A long-term time series econometric analysis is done with the RBI database on Indian Economy, 2015. The time period considered is 1980-81 to 2012-13. In the study after studying the impact of fiscal deficit on economic growth, the

fiscal deficit is then replaced by the effective fiscal deficit and revenue deficit. ADF unit root test is performed to check the stationary and the time series is found to be I (1). After this Johansen cointegration test is being performed to test the cointegration. Since cointegration is there, the Vector Error Correction (VEC) model is used for estimating the long run and short run relationships among the variables. The long-term estimate suggests fiscal deficit has a significant negative relation with GDP – supporting the neo classical argument. On the other hand, the fiscal deficit's relation with GDP in the short term is insignificant. Moreover, the Effective Fiscal Deficit has a significant positive relation with GDP. Crowding of private investments are also visible here. The results support the 'Golden Rule' of public finance that if the deficit amount is used for capital expenditure purposes it significantly affects growth. The significant changes in the economy after 2013 are not being included in the study which may affect the current results of the study.

**Srivastava, C. R. (2004), Fiscal Deficits and Government Debt in India: Implications for Growth and Stabilization.** Find that when fiscal deficits are high in magnitude relative to GDP and largely structural in nature, the government's ability to mount counter cyclical interventions could be compromised, particularly when growth is below trend levels and intervention is needed. This was clearly experienced in the late nineties and the early part of the new decade.

### Need and Significance of the Study

As stated above, the fiscal deficit has adversely affected the economy and has long term effects on capital expenditure. Moreover, the development expenditure though is increasing in post NEP period but has no significant impact on reducing poverty **Ramaprasad et al. (2016)**. As per the available literature, there is no comparative study analyzing the effect or relation of fiscal deficit with the development expenditure in particular; before and after the New Economic Policy. This gap is being filled by this study, materializing it for the further comparative analysis regarding the considered variables.

### Objectives of the Study

- a) Observing the trend analysis of developmental expenditure before and after NEP.
- b) Observing the trend analysis of net fiscal deficit before and after NEP.
- c) Estimating the regression line between the net fiscal deficit and development expenditure.

### Hypothesis

The hypothesis is framed as follows:

H<sub>0</sub>: There is no significant relation between the development expenditure and net fiscal deficit.

H<sub>1</sub>: There is a significant relation between the development expenditure and net fiscal deficit.

### Methodology

The analysis tries to study the relation between these two variables using trend analysis, scatter charts, line charts and regression analysis.

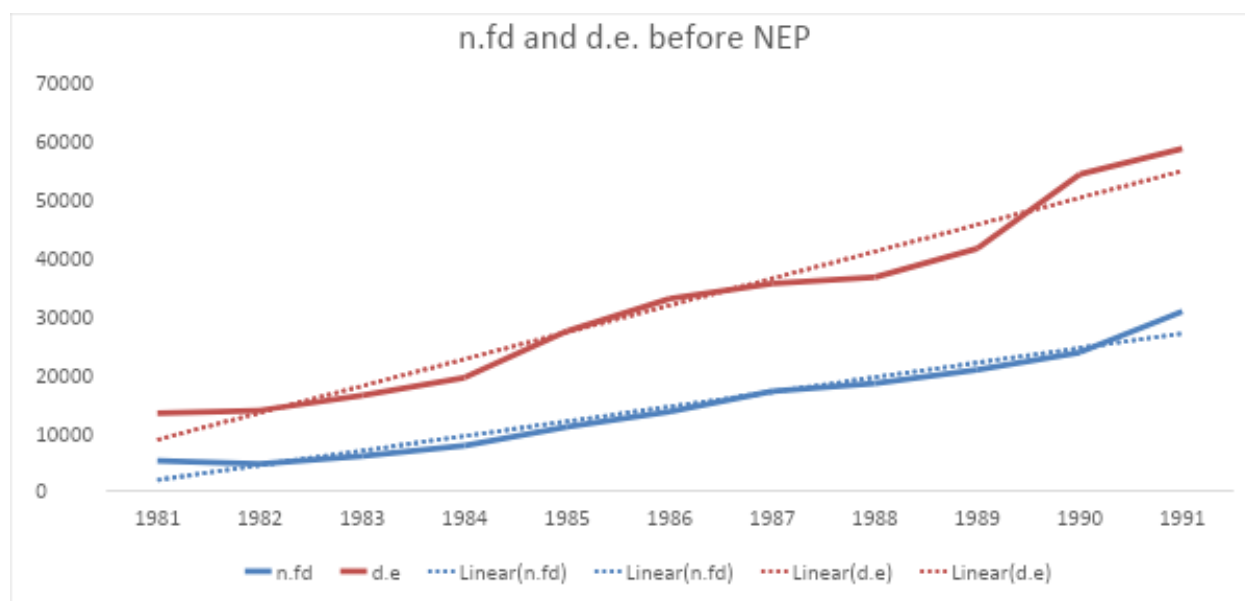
The comparison is made before (1980-81 to 1990-91) and after (1991-92 to 2022-23) the New

Economic Policy of 1991.

In part-1 of the study, trends of the two variables are being studied while in part-2 the regression analysis is performed.

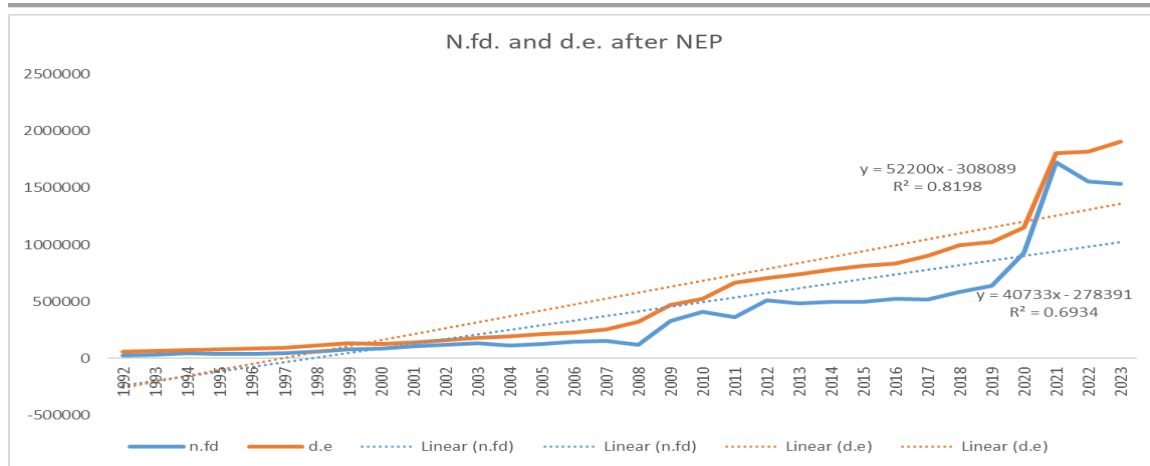
## Results and Discussion

### PART – 1 Trend analysis **BEFORE NEP**



- Both Net fiscal deficit and Development expenditure shows an uptrend along the time factor, with development expenditure increasing at a faster rate than the fiscal deficit.
- The  $R^2$  for both the variables is above 95% showing a good fit of the data points towards the trend line.
- There is a huge gap throughout the time period between the variables showing a good amount of non-developmental expenditure at this time slot.

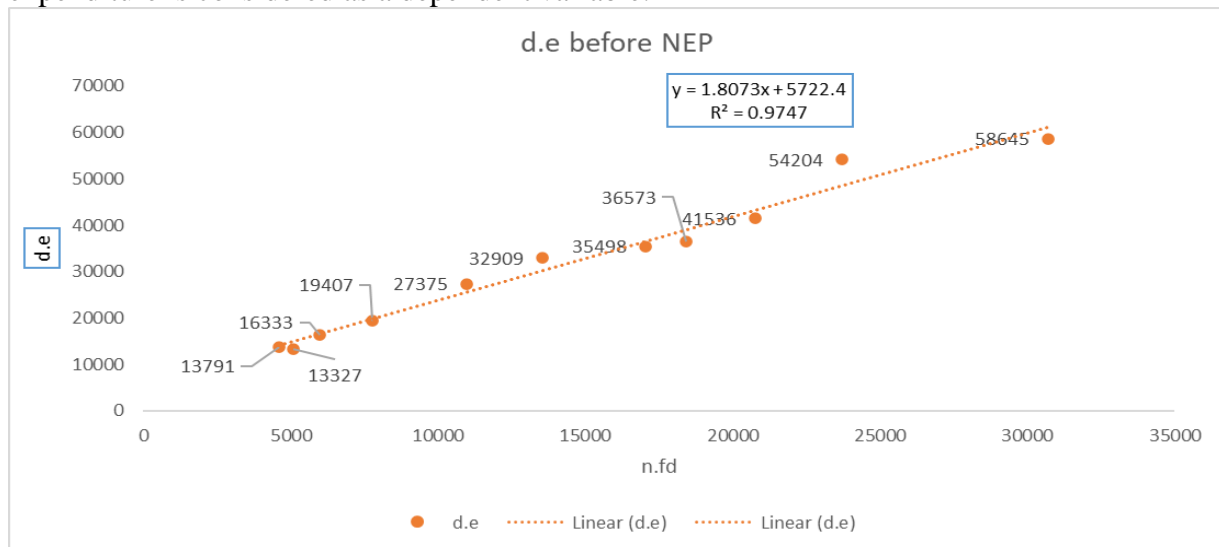
### **AFTER NEP**



- Both Net fiscal deficit and Development expenditure shows an uptrend along the time factor, with development expenditure increasing at a faster rate than the fiscal deficit.
- The  $R^2$  for both the variables is above 95% showing a good fit of the data points towards the trend line.
- After NEP. The gap is far more less between the variables reflecting the reduction of non-developmental expenditure during this time frame. However, from 2003 onwards this gap has widened until 2019-20. And in 2021, there is a sudden widening of the gap again

**PART -2**

In this section, fiscal deficit is considered as an independent variable and development expenditure is considered as a dependent variable.



The regression analysis is as follows:  
 SUMMARY OUTPUT

---

Regression Statistics	
Multiple R	0.987275
R Square	0.974711
Adjusted R Square	0.971901
Standard Error	2614.685
Observations	11

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	Coefficien ts	Standard Error	t Stat	P-value
Intercept	5722.373	1605.98	3.56316	0.00608
n. fd	1.807264	0.097035	18.6248	1.7E-08

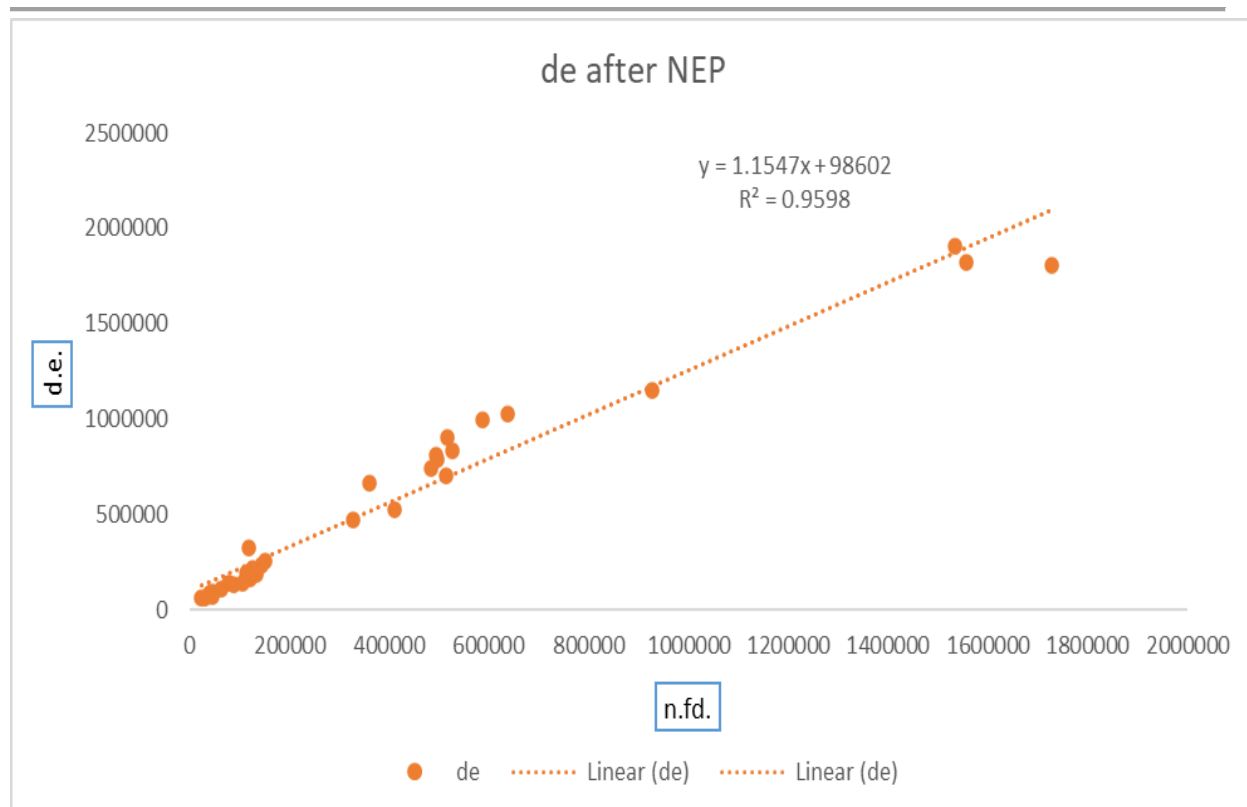
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$R^2$  Square has a good %age of 97.4% - hence the data points are close to the regression line. t-value >2 indicating larger difference between sample and population mean. The probability of getting this value lies in the rejection region (since, p-value < 0.05 or is very low). Hence there exists a relation between dependent and independent variables.

Regression line:

$$DE = 5722.37 + 1.81 \text{ NFD}$$

(3.56)    (18.62)     $R^2 = (0.9747)$



The regression analysis is as follows:

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.979692
R Square	0.959796
Adjusted R Square	0.958456
Standard Error	110234.6
Observations	32

	Coefficients	Standard Error	t Stat	P-value
Intercept	98601.75	25851.5	3.81416	0.00063
n. fd	1.154683	0.043147	26.7618	1.71E-22

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R Square has a good %age of 95.9% - hence the data points are close to the regression line. t-value >2 indicating larger difference between sample and population mean. The probability of getting this value lies in the rejection region (since, p-value < 0.05 or is very low). Hence there exists a relation between dependent and independent variables.

Regression line:

$$DE = 98601.75 + 1.15 NFD$$

(3.81)      (26.76)       $R^2 = (0.9598)$

### Findings And Conclusion

There exists a positive relation between the net fiscal deficit and the developmental expenditure of the central government.

Before the new economic policy, 1991, an increase in fiscal deficit was able to increase the development expenditure by approximately 2 times. Through the trend analysis it is observed that there is a gap between n. fd and d.e. trend line. It means a significant proportion of fiscal deficit is spent on non-developmental expenditure too.

While, after the new economic policy, 1991, approximately, the same amount of development expenditure is increased as that of the fiscal deficit. Through the trend analysis it is observed the gap between the development expenditure and fiscal deficit has fallen – indicating the use of borrowings for the development expenditure. However, with a rise in fiscal deficit, a much more amount of development expenditure is done after covid 19 – which the scatter plot clearly shows.

The results lie parallel to the previous studies done before and after the NEP. All in all, we can say that relatively, more and more of the fiscal deficit was utilized for the development expenditure after the reform when compared to the pre-reform time frame.

### Suggestions

It is being suggested that the fiscal deficit should be controlled as far as possible and the borrowed money should be continued to be spent on the development expenditure so that an increased GDP can be facilitated for the long run. Fiscal policy can be a powerful tool for accelerating growth through increased development expenditure, a large part of which has been funded by the fiscal deficits of the country.

### Future Scope

The paper compares the relationship between the fiscal deficit and developmental expenditure before and after the New Economic policy of 1991. With the found relation, the prospective research can extend the same by considering the composition of the development between Centre and States. Further, a comparative analysis can be done by looking into the states' expenditure practices. The present study relies on a simple trend analysis; including an econometric technique of time series analysis gives more concrete results.

**Annexure 1**

Table 1: Pre-reform Net Fiscal Deficit and Development Expenditure		
(in ₹ Crores)		
Year	Net Fiscal Deficit	Development Expenditure
1980-81	5110	13327
1981-82	4591	13791
1982-83	5973	16333
1983-84	7770	19407
1984-85	10972	27375
1985-86	13544	32909
1986-87	17036	35498
1987-88	18431	36573
1988-89	20770	41536
1989-90	23722	54204
1990-91	30692	58645

**Source: Handbook of statistics, RBI  
Economic Survey of India, 2023**

**Annexure 2**

Table 2: Post-reform Net Fiscal Deficit and Development Expenditure		
(in ₹ Crores)		
Year	Net Fiscal Deficit	Development Expenditure
1991-92	24622	59313
1992-93	30232	65479
1993-94	45994	72464
1994-95	40313	82803
1995-96	42432	84427
1996-97	46394	94197
1997-98	63062	110994
1998-99	79944	137257
1999-00	89910	129151
2000-01	107854	139386
2001-02	123074	159364
2002-03	133829	184197
2003-04	115558	195428
2004-05	126252	214955

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2005-06	145743	229060
2006-07	151245	255718
2007-08	120714	325670
2008-09	329024	471399
2009-10	411448	528242
2010-11	361026	666069
2011-12	514103	705321
2012-13	484450	742417
2013-14	496157	784504
2014-15	495245	813813
2015-16	527289	835019
2016-17	516438	899369
2017-18	588668	998201
2018-19	639249	1025979
2019-20	927553	1153187
2020-21	1727529	1808981
2021-22	1557809	1821603
2022-23	1535430	1908663

**Source: Handbook of statistics, R  
Economic Survey of India, 2023**

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## Safeguarding Sandalwood: Real-Time IOT Monitoring and Protection System Design

Shambhu Gore <sup>1</sup>, Sneh Chavan <sup>2</sup>, Raturaj Patil <sup>3</sup>, Digambar Koigade <sup>4</sup>

<sup>1</sup> MCA, Department of Computer studies, CSIBER-Chhatrapati Shahu Institute of Business Education and Research, Kolhapur -416001, India.

<sup>2</sup> Assistant Professor, Department of Computer studies, CSIBER-Chhatrapati Shahu Institute of Business Education and Research, Kolhapur -416001, India.

<sup>3,4</sup> MCA, Department of Computer studies, CSIBER-Chhatrapati Shahu Institute of Business Education and Research

**ABSTRACT:** The recent increase in sandalwood thefts poses a major threat to this treasured tree species. Sandalwood trees have a commercial edge over other tree varieties due to their distinct scent and valuable therapeutic characteristics. However, the current lack of a strong protective measure has jeopardized these trees. Most of the systems are developed to ensure the security for trees implementing various sensors. The suggested system design prioritizes security, protecting the plantation with features such as CCTV and infrared sensors. It goes beyond security, though, by incorporating plantation management. Moisture sensors are used to ease drip irrigation and ensure the health of the plants.

The method enters its second phase when the trees reach around 6 years of age. Through RFID tags, this phase incorporates complete tree-specific information management, including fertilization. Furthermore, the installation of vibration and temperature sensors improves security. These sensors improve tree protection, assuring their safety and health. The system effectively maintains the plantation by merging data from multiple sensors, giving a comprehensive approach to both security and plant care. All the sandalwood plantations will be under observation and control through 24\*7 Automation updating the frequent data into the cloud and app

**Keywords :** *IoT, Sensors, Drip irrigation, RFID & Cloud*

### INTRODUCTION

In recent times, there has been a surge in news reports concerning the illicit trade of valuable trees. These trees hold significant importance in the fields of medicine and cosmetics, making them prime targets for smuggling. Unfortunately, the substantial profits associated with their sale have led to an alarming increase in incidents of unauthorized tree cutting and smuggling. This issue is not confined to India alone; countries like Australia, China, and Africa are grappling with similar problems. To put the financial aspect into perspective,

Indian sandalwood is currently valued at approximately 12,000 to 13,000 INR per kilogram, while Red Sanders, highly sought after in the international market, can command prices of around 10 core INR per ton. Regrettably, Indian sandalwood trees are now under the threat of extinction, prompting

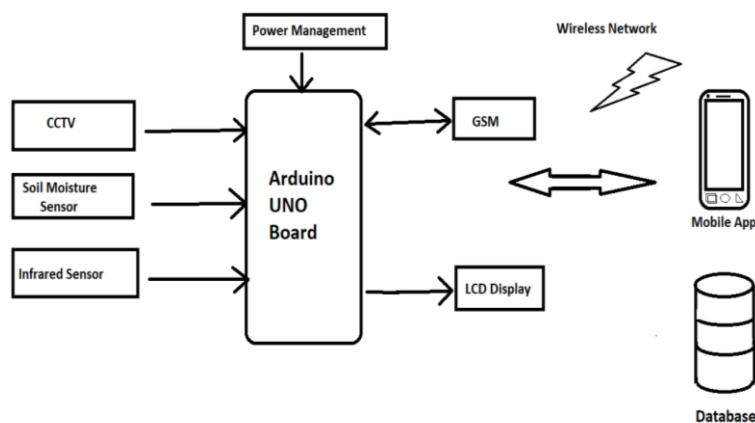
the government to impose export restrictions in a bid to protect them. Despite these measures, there continue to be reports of sandalwood smuggling and trade.

A significant challenge is the lack of an effective method or system to detect and combat illegal tree cutting and logging. To safeguard the status of your trees, it is advisable to establish a monitoring system within your working environment. Such a system has been developed to address this problem by identifying and alerting us to potential issues, enabling us to take immediate action. The ultimate goal of this system is to assist us in our mission to preserve nature. Throughout the ages, the sandalwood tree has been regarded as one of the world's most invaluable treasures.

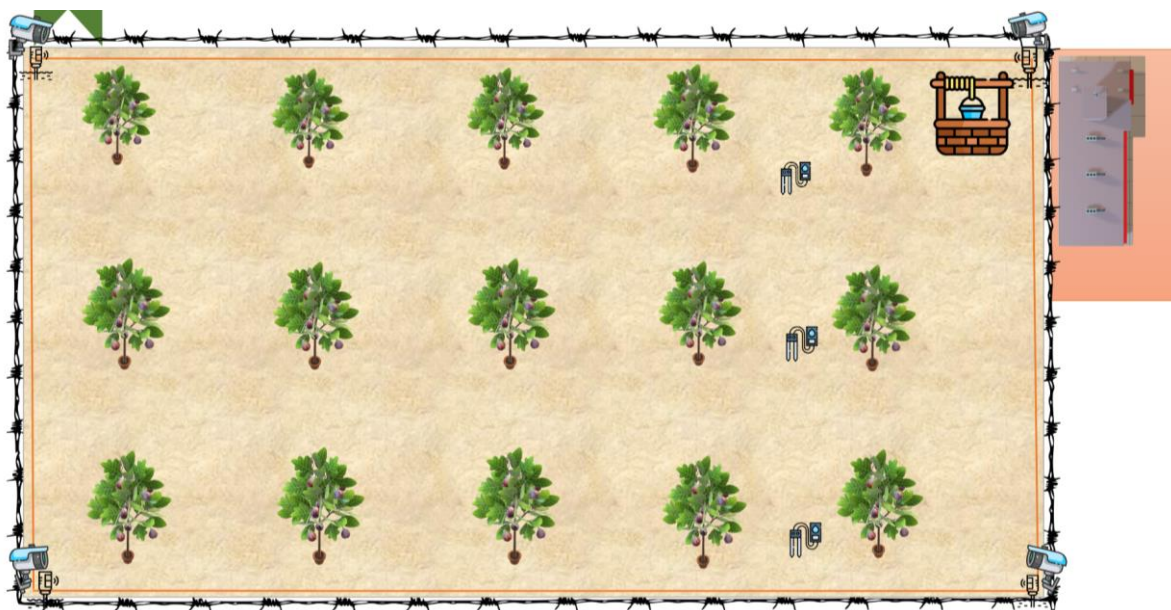
**LITERATURE REVIEW**

Recent literature describes several projects that aim to create IoT-based systems for safeguarding priceless trees, notably sandalwood, in forested areas. These systems employ a variety of sensors and communication technologies to identify and prevent unlawful operations like illicit logging, forest fires, and tree cutting. The shared research goal of these initiatives is to strengthen tree security and notify relevant authorities or owners when unauthorized activities are discovered, helping to safeguard forest ecosystems. However, there are research gaps in these initiatives. This includes assessing scalability, cost-effectiveness, and the ecological effects on larger forest regions and different tree species. Further inquiry is also needed into the dependability of communication infrastructure in distant forest locations. Furthermore, possible weaknesses in these systems, as well as techniques for improving their robustness, must be investigated and addressed. The primary research goal of these initiatives is to use IoT technology to improve the security and monitoring of valuable plants, particularly sandalwood, in forest environments. They intend to use a variety of sensors and communication systems to prohibit criminal harvesting, tree cutting, and forest fires. The suggested technologies are designed to warn relevant authorities or tree owners when unauthorized activities are discovered, allowing for quick responses to protect the forest environment.

**METHODOLOGY: First Phase Architecture**



In the first phase of this architectural system, several input devices are integrated to monitor and collect information. These devices include a Closed-Circuit Television (CCTV) camera, a Soil Moisture Sensor, a Lesser Sensor (assuming this refers to a light sensor), and a Detector (presumably for some specific purpose). These sensors and the CCTV camera are connected to an Arduino UNO Board, a microcontroller capable of processing and managing data from these sensors. The power supply for the Arduino UNO Board and all the sensors is provided through a dedicated power source to ensure continuous operation. The Arduino UNO Board acts as the central hub for data processing and control in this setup.



First Phase of the system

Here's how the system works step by step:

1. Data Acquisition: The CCTV camera continuously captures video footage, the Soil Moisture Sensor measures soil moisture levels, the Lesser Sensor monitors ambient light conditions, and the Detector senses specific events or conditions based on its purpose.
2. Data Processing: The Arduino UNO Board receives data from these sensors and processes it in real-time. For example, it can analyze video streams from the CCTV camera, process analog data from the sensors, and perform any necessary calculations or logic.
3. Display: The processed data is then displayed on an LCD screen. This display provides real-time information to anyone viewing it, allowing them to monitor the current state or conditions being sensed by the various sensors.

4.Data Storage: Simultaneously, the collected data is sent to a ThingSpeak cloud-based storage system. This storage system can be hosted on the internet and is accessible from anywhere with an internet connection. It ensures that historical data is preserved and can be retrieved for analysis or reference at any time.

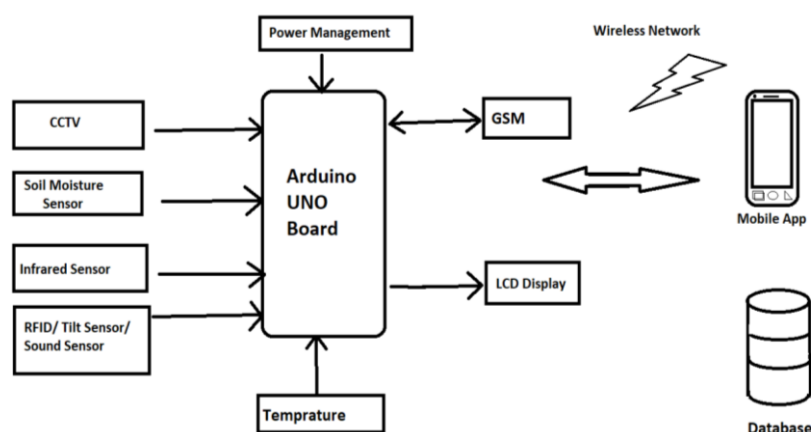
5.User Interaction: To provide user interaction and access to the collected data, a mobile app is developed. Users can install this app on their smartphones or tablets. The app communicates with the cloud-based storage to retrieve and display real-time and historical data from the sensors and the Arduino UNO Board.

6.Wireless Connectivity: The wireless network, typically WiFi, serves as the communication medium that connects the Arduino UNO Board, the cloud-based storage, and the mobile app. It enables seamless data transmission and user interaction over a local or remote network.

This architecture allows for the real-time monitoring and control of various sensors through an Arduino UNO Board, with data displayed on an LCD screen. It also provides remote access and interaction with the collected data through a mobile app, facilitated by a wireless network, and ensures data persistence and accessibility in the cloud.

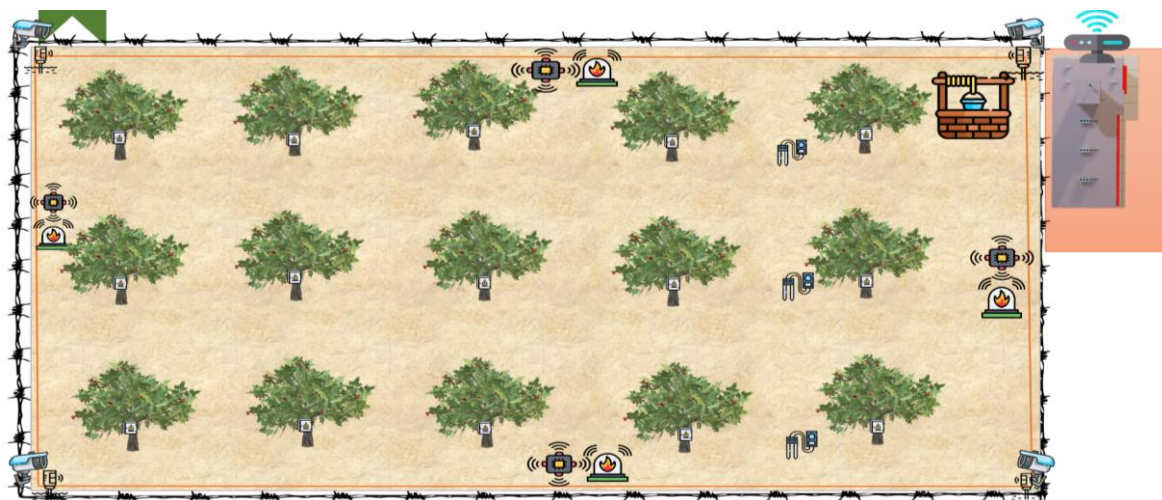
## 2. Second Phase Architecture

After six years of plantation, the second phase of the architecture was implemented to incorporate advanced monitoring and control systems.



In the second phase of the architecture, an expansion of the system takes place by introducing additional sensors and components. RFID technology is incorporated, with RFID tags being utilized for identification and tracking purposes. These RFID tags are monitored by an RFID antenna, enhancing the system's capabilities for asset tracking and identification. Furthermore, a tilt sensor, temperature sensor, sound sensor, and vibration sensor are seamlessly integrated into the setup, providing a broader spectrum of environmental data and event detection. These new sensors are

connected to the existing Arduino UNO Board, which serves as the central processing unit. As before, the Arduino UNO Board processes data from all connected sensors, displaying pertinent information on the Mobile Application. Simultaneously, this data is transmitted to the cloud for storage and is made accessible through the mobile app, ensuring a comprehensive and integrated monitoring system. Wireless network connectivity, such as WiFi, continues to enable real-time data transmission and user interaction for an expanded range of sensor inputs. This phase enhances the system's capabilities by incorporating RFID technology and additional environmental sensors for a more comprehensive monitoring and control solution.



Second phase of the system

### Components

#### CCTV



The purpose of CCTV cameras in this real-time IoT monitoring and protection system is to provide continuous visual surveillance, enabling the real-time monitoring and recording of activities in sandalwood plantations, storage areas, and access points. These cameras serve as a crucial deterrent to

theft and unauthorized access, as well as a means to gather evidence in case of security breaches. Their high-resolution imaging, motion detection, and remote access capabilities empower security personnel to promptly respond to potential threats, ensuring the security and safeguarding of valuable sandalwood resources around the clock.

### Soil Moisture Sensor



The purpose of soil moisture sensors in this real-time IoT monitoring and protection system is to provide essential data regarding the moisture levels in the soil surrounding the sandalwood plants. These sensors help ensure optimal growing conditions for the sandalwood by enabling precise irrigation management. By continuously monitoring soil moisture levels, the system can trigger automated irrigation processes when the soil becomes too dry, thus promoting healthy plant growth and mitigating the risk of drought stress. Additionally, this data can be integrated with the broader IoT system to enable proactive decision-making and conserve water resources, ultimately contributing to the overall health and sustainability of the sandalwood plantation.

### 5HP Motor



A 5HP (Horsepower) motor plays a crucial role in this real-time IoT monitoring and protection system for safeguarding sandalwood by powering various equipment and processes. One primary application is for the irrigation system, where the motor can drive water pumps to ensure a consistent and efficient water supply to the sandalwood plantation. It's responsible for drawing water from a source, like a well or reservoir, and distributing it through the irrigation network to maintain optimal soil moisture levels.

### RFID Antenna



Placed strategically at key locations such as access points and storage facilities, the RFID antenna interacts with RFID tags affixed to sandalwood logs or containers. When tagged assets pass through or near these antennas, it triggers automatic identification, allowing the system to monitor the movement and location of each sandalwood resource in real-time.

### RFID Reader



The RFID reader is a pivotal component within the real-time IoT monitoring and protection system for safeguarding sandalwood. Placed at critical checkpoints, storage facilities, and access points, the RFID reader actively communicates with RFID tags attached to sandalwood logs or containers. This interaction enables the system to accurately identify, track, and manage each individual sandalwood resource. By instantly recognizing the RFID-tagged assets as they move through the system, it ensures precise inventory control and security monitoring.

### RFID Tag



RFID tags are an essential component of the real-time IoT monitoring and protection system for safeguarding sandalwood. These tags are securely attached to individual sandalwood logs or containers, enabling unique identification of each resource. As these tagged assets move through various checkpoints, access points, and storage facilities, RFID readers interact with the tags, collecting critical data about their location and status in real-time.

### Arduino Uno

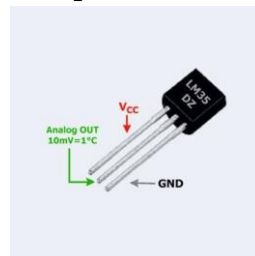


The Arduino Uno R3 board serves as a versatile and programmable control hub within the real-time IoT monitoring and protection system for safeguarding sandalwood. Its role involves processing data



from various sensors and devices, such as soil moisture sensors, RFID readers, or even CCTV cameras, and making real-time decisions based on this data. Additionally, the Arduino Uno R3 can facilitate communication between these devices, execute automation tasks like controlling irrigation or security alerts, and transmit data to a central server for analysis. Its flexibility and compatibility with a wide range of sensors and actuators make it an ideal choice for orchestrating and optimizing various functions within the system, ensuring efficient sandalwood management and protection.

### Temperature Sensor



The temperature sensor is a critical component in the real-time IoT monitoring and protection system for safeguarding sandalwood. By continuously measuring the ambient temperature in the sandalwood plantation, it provides crucial environmental data that aids in making informed decisions. Monitoring temperature variations helps optimize the sandalwood's growth conditions, ensuring they are within the ideal range. Extreme temperature fluctuations can indicate potential stress or disease in the plants, allowing for prompt intervention.

### Tilt Sensor

The tilt sensor plays a role is strategically positioned to detect any unauthorized tampering or movement of sandalwood logs or containers.



When a tilt or movement beyond a predefined threshold is detected, the sensor triggers immediate security alerts. This functionality is crucial in preventing theft and ensuring the security of valuable sandalwood resources.

### Sound and Vibration Detector



The Sound and Vibration Detector sensor positioned strategically in key locations, this sensor continuously monitors the acoustic and vibrational environment around sandalwood assets, such as storage facilities or access points. It is particularly valuable for detecting unauthorized activities like attempted break-ins or tampering. When abnormal sounds or vibrations are detected, the sensor triggers immediate security alerts, enabling swift responses to potential threats.

### 5000 mAh battery

The 5000mAh battery monitoring system for safeguarding sandalwood, especially when tilt and temperature sensors are attached to each tree. In the event of a power cut or outage, this high-capacity battery ensures uninterrupted operation of the sensors, allowing them to continue monitoring and transmitting data from the



sandalwood trees. This resilience ensures that critical data related to tree orientation (tilt) and environmental conditions (temperature) remains accessible even during power disruptions. Consequently, the system can maintain real-time monitoring and security alerts, ensuring the ongoing protection and well-being of the sandalwood resources, regardless of power interruptions.

### Laser Sensor and Detector



The Laser Sensor and Detector sensor are strategically deployed throughout the sandalwood plantation to detect smaller and less obvious movements or disturbances. Whether it's detecting minor soil shifts, subtle fluctuations in microclimatic conditions, or small animal activity.

### Buzzer

The Buzzer sensor serves as an important alerting mechanism within the real-time IoT monitoring and protection system for safeguarding sandalwood. Strategically placed in key areas, this sensor is programmed to generate audible alarms in response to security breaches or critical events, such as unauthorized access,



tampering, or adverse environmental conditions. When triggered, the buzzer sensor emits a loud sound, instantly alerting security personnel or nearby individuals to the situation at hand.

### Application Manager



The application manager serves as the central control, It provides a user-friendly interface where authorized personnel can access comprehensive information about each sandalwood tree, including real-time data from tilt and temperature sensors. Additionally, the application manager facilitates live access to CCTV camera feeds, enabling users to monitor the sandalwood plantation and storage facilities remotely. It also manages notifications and alarms, promptly alerting users to security breaches, environmental anomalies, or any other critical events.

**Cloud Storage:** Cloud storage is serves as the secure repository for storing and managing vast volumes of critical data generated by sensors, CCTV cameras, and other devices. By utilizing cloud storage, the system ensures the preservation and accessibility of historical and real-time data from multiple sources. This data can be easily retrieved, analysed, and shared with authorized personnel, providing valuable insights for decision-making, security audits, and compliance reporting. Moreover, cloud storage enhances data redundancy and security, reducing the risk of data loss or tampering compared to traditional physical storage methods.

### CONCLUSION

The concept aimed at preventing the management of critical trees in a protected jungle area and devised a streamlined approach by deploying sensors and microcontrollers around these trees. The latest technology, This initiative seeks to expand this system to encompass a network of such intelligent trees, effectively creating an Internet of Things (IoT) ecosystem. These trees are under constant surveillance, akin to having nerves, ensuring their well-being. This approach involves constructing structures that protect trees in remote areas, especially those towering high, where traditional security measures are impractical. In essence, this innovative program aims to tackle deforestation, preserving the ecological balance, and combatting one of the primary contributors to global warming often associated with remote forest areas.

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