

Sustainable Business Evolution and Strategies for Redefining Growth

Edited by

Prof. (Dr.) Kallal Banerjee
Dr. Sourav Chatterjee



Swami Vivekananda University

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Sustainability Practices in Value Chain Analysis: A study on Indian Tea Industry

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Abstract:

The Indian tea industry happens to be one of the oldest and most important ones in the world, playing a vital role in the country's economy, culture, and world trade. India also happens to be known for producing some of the finest teas and is one of the significant consumers and exporters of tea. The industry's value chain involves various stages, from large-scale plantations where tea is cultivated to the final packaging and distribution of products in tea forms to consumers worldwide. It is a series of connected activities that add value at each stage, starting from cultivating tea leaves through processing into various types of teas, followed by production and afterwards marketing and the distribution of the final product. Understanding the Indian tea industry value chain gives clues as to how the factors affecting the quality, price, and availability of the product come together, and it points out some of the challenges and opportunities of the industry for its stakeholders. Value chain analysis would thus unveil the many stages involved in the production, processing, and distribution of tea. This will reflect key activities and enhance identification of improvements in these stages. It could as well be an area where the sector is considered among the larger developments both domestically and globally; indeed, India leads in becoming one of the prominent producers and exporters of tea.

Input supply represents upstream activities in business economics, specifically in such areas as plantation and cultivation. Land Preparation: Tea plantation requires specific agro-climatic conditions- acidity of soil, reasonable

rainfall, and high humidity. Land preparation involves clearing, levelling, and enriching the soil. Tea Plant Varieties: Tea plant varieties like Assam, Darjeeling, and Nilgiri are chosen based on the region and climate. Labor: Tea plantation is labour intensive; planting, pruning, and plucking require a vast labor force. Labor availability and cost is a critical factor. Fertilizers and Pesticides: Application of organic or inorganic fertilizers and pesticides to stimulate growth and protect crops against pests.

Keywords: Agro-climatic, Brand Equity, Capacity Building, GI tag

Key Activities

Crop cultivation and plucking: Tea cultivation is undertaken with the consideration that quality leaves only are to be plucked. The primary application of either hand-plucking or mechanical pluckers, hand-plucking even remains the most common method especially for super teas.

Withering:

Leaves are left spread to remove excess moisture. This leaves the leaves soft for further processing.

Rolling:

The leaves are rolled out to enable the release of enzymes and essential oils, which assist in flavoring the tea. Rolling can be done by hand or through the use of machines.

Oxidation/Fermentation:

The leaves exposed to air resulting in oxidation that changes the flavour and color of the tea. Oxidation is full for black tea while it is only partial for the green tea.

Drying/Firing:

Oxidised leaves are dried by hot air to end the oxidation process and to reduce moisture content, hence making the leaves stable for storage.

Sorting and Grading:

Tea leaves are sorted and graded according to size and quality. Grades can range from whole leaves to broken leaves, fanning, and dust.

Support Activities Research and Development (R&D):

Research and Development related to developing new varieties of tea, development of new cultivation techniques, quality improvement and other works on consumer preference and consumption pattern. Training and Capacity Building: Continuously train workers on best working practices in cultivation, plucking and processing for quality and productivity.

Quality Control:

Quality tea as per defined parameters with, at all stages of production, constant check and measurement.

Infrastructure:

Tea Industry- Infrastructure such as roads, processing factories, and storage facilities are indispensable for quality and efficiency in the tea industry.

Processing and Manufacturing Tea Processing Units:

Already processed at the plantations, tea leaves are taken to factories for further refinements, blending, and packaging.

Blending:

Various tea batches are blended for helping to achieve a flavor profile. Blending is of essence for branded teas for assuring uniformity in taste.

Packaging:

Loos tea, tea bags, or specialty packaging for export. Packaging guarantees the preservation of the final product in quality and freshness.

Marketing and Distribution (Downstream Activities) Home Market:

India is a vast home market because tea is a social beverage. The distribution channels are local tea shops, supermarkets, online channels, and others.

Export Market:

This accounts for the largest part with the consumption of a significant number of teas manufactured in the country and exports a significant amount to countries like UK, Russia, and the Middle East. Export involves quality checking at quite strict levels as well as internationally.

Branding and Advertising:

Tea brands invest in advertising and brand building to establish a slot in the market. Packaging, storytelling, celebrity endorsements are quite common practices.

Retail and E-commerce:

Number of retail outlets; groceries and specialty stores, etc. Growing e-commerce platforms.

Logistics:

Effective logistics and supply chain management is required to transport tea from plantations to processing units and then to the markets.

Finance and Insurance:

Access to all financial services, working capital loans and crop insurance etc. are needed to manage all the risks involved in the process of tea production.

Research Institutions:

Different research centers in India work to refine or renovate tea plantation techniques, pest and disease control, and sustainable production.

Major Challenges

Climate:

Tea production is highly climate-sensitive. Any changes in the climate shift tea yields and quality. Sustainability becomes a necessity to combat these alterations.

Labour:

Tea manufacturing is labor-intensive. Disruptions of available labour and increasing expenses deter production.

Price Fluctuations:

Tea's international market is vulnerable to price fluctuations that will affect producers' profits, especially for small farmers.

Quality:

It is hard to maintain quality as the conditions of production vary from one region to another. Specialty and Organic Teas: Demand for specialty and organic teas is soaring among consumers. It thereby enhances the opportunity space for the producers to examine diversification so that they can capture the premium-ends market segments.

Innovative Packaging:

Environmentally friendly and innovative packaging appeals the consumer with an affinity towards the environment and adds value to the product.

Growing into New Markets:

The expansion of Indian tea in growing markets where the consumption of tea is increasing will lead to new markets opening up for the industry.

Literature Review:

Agricultural Practices:

Most studies reveal the traditional and modern agricultural practices used in the Indian tea plantations. Banerjee (2015) study highlights that agro-climatic conditions played an important role in both quality and yield of tea.

The environmental issues led the practice of sustainable agriculture practices (Barua & Sharma, 2016).

Labor Dynamics:

Labor forms the most vital sector of the value chain of tea. More than one work (for instance Bhowmik, 2002; Sarkar, 2012 discuss the socio-economic conditions of laborers of the tea plantations and highlight the issues such as low wages, poor living condition, and requirements of labor reforms. Position of women in plucking of tea and the gendered dimensions of labor in the tea industry have also been researched by Chatterjee in the year 2003. Technology and Efficiency According to Ghosh (2014), the use of technology in tea processing acts as a stepping stone to either acquiring efficiency and product quality. Besides, there are also studies revealing research on the flavors, aroma, and marketability in the tea processing technique (Bhuyan, 2019).

Quality Control:

Quality assurance provides the reason why India remains a leader in the global markets in this market. Tea Board of India (2018) presented studies on standards and requirement for GI as well as international markets. The application of GI tag, especially on Darjeeling tea, has been discussed by Das (2010). Supply Chain Management: The latest ones focus on the problems of the supply chain, especially the auction system in the big tea markets in Kolkata and Guwahati, direct selling, and exports (Mukherjee, 2017). Intermediaries, logistics, and transportation problems keep reemerging in the literature (Kumar & Singla, 2016). Marketing Strategies: There are few research articles that would focus on the marketing strategies Indian tea brands are using to gain prominence in this global market. Branding, Packaging innovation, and various other trends of digital marketing are discussed while addressing the enhanced possibilities of market outreach, which is further elaborated by Roy in 2020.

Objectives

When evaluating the value chain in the Indian tea industry, the objectives are focused towards knowing the processes,

ascertaining the major challenges, and finding areas for improvement in a value chain.

Here are some possible objectives:

Mapping the Value Chain Objective:

To map the overall value chain in the Indian tea industry from cultivation to consumption, and identify the core stakeholders and their processes at each stage.

Analysis of Production Activities To analyse agricultural and processing activities at different levels in the Indian tea industry and discuss how the actions of all these activities are affecting its quality, yield, and sustainability.

Analysis of Market Factors Aims:

Analysing domestic and international market conditions of the Indian tea industry as well as demand dynamics, pricing mechanisms, etc. Role of auction houses and direct sales, etc.

Assessment of Quality Control and Standards Objective
An analysis of the quality control standards in Indian tea, Identification of the gaps and avenues for improvement and up-gradation of the product quality to meet international standards.

Indian Tea Industry Value Chain

The Indian tea industry involves a long chain of activities, with many different stages ranging from cultivation to the ultimate consumer. Each stage carries potential for value addition and efficiency enhancement to achieve an overall gain in competitiveness of the industry.

A SWOT analysis is a tool used for strategizing to discover the Strengths, Weaknesses, Opportunities, and Threats related to the industry or business. Below given is a SWOT analysis especially prepared for the Indian tea industry, focusing on its value chain.

SWOT Analysis of the Indian Tea Industry

Strengths

1. **Global Reputation and Brand Equity** Tea from India is known worldwide for its high qualities of tea: Darjeeling, Assam, and Nilgiri, which are well branded and associated with good quality.
2. **Agro Climatic Variability** The country's varied geography offers an ideal condition for the production of different types of tea, and therefore it can offer a wide range of flavours and qualities.
3. **Domestic Market** Tea is an everyday consumption drink in India, and this large consumer base always ensures the domestic market demand. This large consumer base can provide some kind of protection against the fluctuations in the global market.
4. **Labor-Intensive Production** Large employment in the tea industry, particularly in rural areas. Availability of a very large number of workers ensures continuance of labor-intensive techniques and hand plucking, which is required for producing high-quality tea.
5. **Good R&D Support** Organizations such as the TRA and state agricultural universities play a key role in developing new tea varieties and cultivation practices.

Weak Points

1. **Heavy Reliance on Manpower** The industry is heavily dependent on manpower. Labor shortages, strikes, and increased labor costs leave it vulnerable and impact considerably on its level of production and quality.
2. **Unstable Quality and Low Grades** Difference in quality due to alternate processing practices, environmental factors, and manual handling leads to inconsistent products affecting consumer trust and export competitiveness.
3. **Low Profit Margins** The premium teas are of high value, whereas the industry suffers low margin profits due to high production cost, low price of the mass market, and volatile global markets.

4. **Fragmented Industry Structure** Indian tea industry is highly spread and involves many small plantation growers and producers with limited capability in modern technology, marketing, and quality control.

5. **Environmental and Sustainability Issues** Tea cultivation has adverse environmental impacts: deforestation, soil degradation, pesticide applications, which are increasingly becoming a cause for concern among consumers and regulators.

Opportunities

1. **Global demand for specialty and organic teas increases** Specialty teas, organically grown, fair trade, and single-origin are gaining traction in the world. There is potential for growth in premium segments of India.

2. **Technology** Modern agriculture practices, automation, and precision farming can optimize yield, lower cost, and enhance quality. Innovations in process and packaging also add value.

3. **Entry into New Markets** In markets such as China, the Middle East, and Africa, where more teas are consumed, opportunities are there.

4. **Branding and Marketing Trends** With good brands and marketing, Indian tea can reach a wider section of markets in both domestic and international markets, especially through the digital space.

5. **Government Support and Policy Initiatives** Entrepreneurial Government Activities Some government packages for the small tea farmers, export incentives, and organic farming will help increase the growth rate of the industry.

Threats

1. **Climate Change and Environmental Degradation** Unpredictable rainfall, increasing temperatures, rise in pest and disease, and others pose a significant threat to the cultivation, yield, and earnings of tea.

2. **High Competition from World Market** Indian tea competes with other significant tea-producing nations such as China, Sri Lanka, and Kenya. These countries tend to have lower costs of production and can sell teas competitively.
3. **Fluctuations in international tea prices** The international tea market is unstable with prices at the mercy of dynamics of supply and demand, geopolitics, and shifting consumer preferences.
4. **high quality and safe standards** Improving the quality and safety requirements of an export market, particularly in the European Union and North America, tends to shut the door and imposes higher costs for compliance.
5. **Decline of the Young Labour Force** Due to its highly labour-intensive nature coupled with a relatively low wage regime, younger individuals have less incentive to pursue a career in the tea industry, thus likely confronting a scarcity of the labour force in the future.

SWOT analysis of the Indian tea industry shows that while this particular industry boasts of various in-built strengths that point out good a reputation in the world and tremendous domestic demand, it continues to be overpowered by severe vulnerabilities. All said and done, the future of growth for this industry will rest upon the successful exploitation of opportunities like forays into emerging markets and technological innovation coupled with danger called threats in the form of climate change and competition at a global level. Strategic sustainability initiatives, quality improvement plans, and measures of market diversification will emerge as the core pillars of sustaining and enhancing Indian tea's competitiveness in international markets.

Creation of value within the Indian tea industry's value chain would therefore entail a betterment of the specific processes, boosting efficiencies, and leveraging opportunities to be made at each of the stages in that very value chain from cultivation all the way to consumers getting hold of the final product. Here is a detailed look at how value can be created across different stages of the tea industry's value chain:

Input Supply Stage:

Quality Inputs: The yield levels and quality of tea also increase due to good seed, fertilizer, and pesticide. Other factors include high-yielding and disease-resistant tea varieties.

Sustainable Farming Practices: With the increasing demand for organic and environmentally friendly products, it will be satisfied by organic farming and eco-friendly inputs. Therefore, the value of the produced tea increases.

Training and Education: Implementing best-practice soil management, irrigation, and pest control training to farmers will enhance productivity and quality.

Stage Cultivation:

Proper Use of Land: By applying precision agriculture techniques such as soil health monitoring and optimized planting, one will increase the yield per hectare yet reduce waste.

Labor Management: By ensuring good working conditions, and proper training, and perhaps mechanization in parts of the process, one can enhance the productivity while retaining good quality.

Climate-Resilient Practices: There are climate-change-reducing practices, among which include harvesting of rainwater, managing and conserving soil, as well as employing shade techniques. These would encourage continuous production and loss minimization at the processing stage.

Processing Stage

Modern Processing Technologies: There is a great opportunity to adopt modern machinery and technology that ascertain withering, rolling, oxidation, drying, and packaging in order to enhance quality, reduce handling time, and thereby minimize generation of waste.

Quality Control: Strict controls on quality at every stage of processing ensure that the tea is at par with international

standards, which is expected to fetch premium prices in international markets.

Value Addition: Product diversification and the production of specialty teas like green tea, white tea, and flavoured teas enhance the value addition. New products, such as ready-to-drink tea or tea-based beverages, can add even more margins.

Stage Packaging Packaging Innovation: Such packaging will not only be attractive but also functional - keeping the tea fresh and of high quality-adds more attraction to a consumer. Environmentally friendly packing can also be quite an attraction for eco-sensitive customers.

Brand and Label: A healthy brand image coupled with vivid labeling that will focus on origin, quality certifications, and unique features such as organic or fair trade can greatly increase value, especially for overseas consumers.

Distribution Stage Better Logistics: Increased logistics and thus reduced transport costs will minimize the time to market and ensure tea is consumed at the peak freshness available, hence value added. By Pass Intermediaries through direct channels to consumer: producers should develop direct sales channels- either online or exclusive retail outlets that eliminate intermediaries to capture a larger share of the final price-.

Market enlargement: Expansion across new markets within the nation and to other international markets by recognizing consumer preferences and employing marketing strategies aligned with such preferences may add value through greater market extension and increased sales volume.

Marketing and Sales Stage Brand Positioning : Value creation may also take the form of positioning Indian tea as a premium product. These shall be differentiated based on unique flavors of Darjeeling, or Assam teas from others.

Consumer Engagement: Building deep relationships with the consumers through marketing campaigns, social engagement through media and loyalty programs to create long-term value by infusing higher brand loyalty.

Certification and Ethical Labels: The Fair Trade, Organic, and Rainforest Alliance are some of the certifications that can be added to give value to consumers who would pay a premium price for ethically produced and environmentally friendly products.

Research and Development Product Innovation: Investment in R&D can create new markets through innovative solutions such as new tea blends, health-focused products (e.g. those with added nutrients or functional benefits), ready-to-drink options, etc.

Process Improvements: Ongoing research on improving cultivation, processing, and packaging techniques may lead to greater efficiency, lower costs, and superior quality.

Sustainability and Ethical Practices Sustainable Practices: Embracing sustainability in the value chain from farming practices to packaging could respond to the increasing demand for ecofriendly products from consumers and potentially command a premium.

Ethical sourcing would provide fair wages and good working conditions on the tea estates, enhance the reputation of the brand, attract ethical consumers, and open up ethically motivated markets.

Creating value in the Indian tea value chain requires a holistic approach toward productivity, better quality, and compliance with market demands. Through innovation, sustainability, efficiency, and brand positioning, value added by stakeholders in the industry will likely be maximized for competitiveness and added value along every step of the chain. Valuations will serve the producers and manufacturers while further contributing to the overall growth and sustainability of the Indian tea industry.

Value Creation Model for Indian Tea Sector

Input Supply Stage Objective:

Quality and Sustainable Inputs should enhance productivity as well as the quality of tea output.

Quality Inputs: Adopt certified quality seeds, organic fertilizers, and environment-friendly pesticides.

Supplier Relationships: Develop long-term relationships with suppliers since they ensure quality material availability along with just in time supply.

- **Training and Education:** Empower farmers with training on effective use of inputs to increase productivity as well as sustainability.

Value Creation Activities:

- Seed and input certifications
- Programmes in sustainable farming
- Research and Development for eco-friendly alternative inputs

Cultivation Stage Target: Improving practices of farming to augment both quality and yield and most importantly sustainability.

Precision Agriculture: Agriculture which is based on monitoring the health of the soil, weather forecasting and plants .

Labour Efficiency: Labour best practice via better working conditions, better training, and mechanization where possible.

Climate-Resilient Practices: Devote to shade management, rainwater harvesting, and crop diversification on the farm as risk adaptation measures in climate.

Value Addition Practices:

Precision farming technology.

Labor welfare schemes.

Agroclimatic resilience.

Processing Stage Mission:

Develop tea processing technologies to provide quality and product range diversity.

Advanced Processing Technologies:

Obtain upgrading equipment for withering, rolling, oxidation, drying, and packaging to sustain quality. **Quality Control:** Exercise tight controls over all processing activities to maintain uniformity and adherence to world standards.

Value-Added Products: Introduce value-added products like specialty teas (green tea, herbal teas) and novelty products (ready-to-drink tea, tea extracts).

Value Creation Activities:

- Installation of new processing equipment.
- Standardization of quality control practices.
- Product diversification of value-added and specialty teas.

Distribution Stage Objective:

The channel's efficiency is increased while reducing the associated costs. It ensures that products hit the market at the right time.

Optimizing Logistics: Reduce transportation time and cost to arrive at the customer's tables in the best condition possible.

Direct-to-Consumer Marketing Channels: Establish online channels and sell directly to customers, thus saving on intermediaries and increasing the margin.

International Market Expansion: Identify new markets and enter into them to expand consumer bases and minimize market dependence on traditional markets.

Value Creation Activities:

Building a strong logistics infrastructure. Introduce an online platform for direct sales. Entries into new markets across geographical regions.

Marketing & Sales Stage Objective: To boost branding and engage consumers to go up the sales ladder and eventually strengthen loyalty toward the brand.

Brand Building: To establish Indian Tea on the premium plane with Darjeeling, Assam, etc. as regional characteristics to make it distinctive in the international market.

Digital Marketing: Digital media outreach through social media, content marketing, etc. Obtain Organic, Fair Trade, and Rainforest Alliance certifications to reach the ethical consumer's conscience.

Value Creating Activities:

Brand identity and positioning, Digital marketing, Ethical and quality certification products development and marketing.

Supporting Activities and R&D Product Innovation: New tea varieties; improvement in the processing techniques besides introducing new products.

Process Optimization: Develop and come up with cultivation, harvesting, and processing that are cheaper yet superior in quality.

Technology Integration Automation and AI: Utilize AI and automation technologies in areas such as farming, processing, and logistics. This will then enhance efficiency, reduce human errors, and so forth.

Data Analytics: Conduct data analytics to predict demand, optimize supply chain operations, and reflect changes in marketing strategy accordingly.

Sustainability Initiatives Environmental Practices: It utilizes sustainable farm-to-table and processing practices to minimize negative externalities to the environment, which appeals to the friendly ecotourism consumers.

Social Responsibility: Building fair labor practices and community developmental initiatives to lift the well-being of workers and enhance the brand's social image.

Integrated Value Creation Model The value creation model integrates the central stages of the tea value chain with supporting activities that realize maximum value. Here's how it works:

1. Adequate input supply leads to good cultivation, the best yields, and high-quality tea.
2. Effective and efficient cultivation practices feed into high value-added processing for teas of high quality
3. Optimized distribution ensures reach the right consumer in fresh and cost-effective manner
4. Strategic marketing and sales with optimum brand presence drive very high consumer loyalty, and higher margins.
5. Continuous R&D and integrating the technology into every level ensures that the value chain of every stage is continuously undergoing change and, therefore remains ahead of its competitor within the industry.
6. Sustainability initiatives undertaken at every stage not only improve the brand image but also assure sustainability in the long run and attract more and more customers conscious of their concern to save the environment.

With sustainability practices in the Indian tea industry value chain, it will be important to know how this industry can be made economically viable at the same time while ensuring environmental minimal damage and social responsibility. In general, the current intense need for sustainability practices in the tea industry has become very important because of current global awareness of environmental issues as well as the existence of ethical issues and long-term management of resources.

Some of the key areas to consider in exploring sustainability practices in this context are as outlined below:

Sustainable Agriculture Organic Farming: Organic farming is a means of replenishing earth instead of harming it. A switch to such practices eliminates the use of synthetic pesticides and fertilizers, thus minimizing environmental impact as well as improving soil health. Organic tea cultivation also gives in to consumers' demands for increasing eco-friendly products.

Agroforestry Practices: Agroforestry, or the inclusion of trees and other vegetation in a plantation of tea, will enhance biodiversity, increase carbon sequestration, and create more alternative sources of income from the selling of such products like timber.

Water Management: Alternate irrigation techniques like drip irrigation and collection of rainwater may avoid the overuse of water. Hence, development towards decreasing the limited availability of water may bring about massive reductions, becoming an issue in areas emphasizing tea production.

Environmental Impacts Reduction Waste Management: Tea manufacturing process produces many wastes, which include tea dust and pruning. Waste management would ultimately decrease the adverse environmental effects. These wastes can be recycled, for instance, as compost or biofuel.

Minimize carbon footprint: Tea industry will be able to minimize its carbon footprint using more efficient energy use in process plants. This can be done with the help of some efficient technologies, such as solar and biomass, that generate power and run machines.

Climate adaptation practices: Tea plantations can adapt to these factors through research and application of climate-resilient varieties, modified planting schedules, and practices of shade management.

Social Sustainability Fair labor practices : Social sustainability involves wage, working condition safety, and other social benefits to the workers. Such labor practices are often seen as a platform of fair-trade certification and development of the living conditions for the tea worker.

Community development: This can be seen as investments that the tea companies make within a community, such as education, healthcare, and infrastructure development. Even though these investments can be seen and benefit workers in the tea estate, they also further the long-term relationship the tea estate develops with its community.

Women Empowerment: Since women are part of the majority proportion of the tea workforce, their gender mainstreaming, leadership development and specifically gender-related needs have to be planned.

Economic Sustainability Multiple sources of Income: Tea farmers should be assisted in diversifying the alternative crops and activities for income generation. This could include eco-tourism or value-added tea products like herbal infusions, flavoured teas, and so on.

Value Addition and Branding: Building high-value brands of teas and specialty teas (organic, single-origin, or handpicked tea) will increase the price obtained for the produce and provide higher margins for tea producers

Supply Chain Efficiency: Reduction of middlemen, efficient logistics, digital technology in traceability, and implementing transparency throughout the supply chain will improve economic sustainability by offering savings in operational costs and easier market access.

Certification and Standards Sustainability Certifications: Obtaining those certifications like Rainforest Alliance, Fair Trade, or Organic may indicate the commitment to sustainable operations and attract environmentally conscious consumers. Most of these have their strict environmental, social, as well as economic criteria.

Quality Control: The strict quality control using sustainable operation helps sustain a fair market position for tea on both home and export markets. Long-term profits, therefore, can be improved.

Challenges to Sustainability

Transition Cost: One significant barrier of adoption of sustainable practice is the expense that is too precious for initial times, which would prove to be hard to own by small-scale tea plantation owners. Support from government, NGOs, or the private sector would certainly raise these small-scale producers' interests.

Access to Markets: Sustainable products are normally sold at a premium; but at the same time, they have limited markets. This may constitute a serious challenge to small-scale producers to access them. Better linkage development within the supply chain and cooperative participation can be relatively helpful.

Climate Change: With growing threats from climatic change to agriculture, the tea industry will have to make continuous efforts towards sustainability in their operations. In this context, research and development for developing innovative solutions in this regard is ongoing.

Policy and Regulatory Support Government Incentives: Making sustainable culture preferred in every aspect of activity by offering incentives from the government side including subsidies on organic farming or tax cuts on energy efficient technologies could encourage change across the industry.

Enhancing legal regulations: There is a need for strengthening regulatory standards related to environmental and labor standards to make the Indian tea industry credible and sustainable.

Conclusion

The value chain in the Indian tea industry can be explored to create a sustainable practice within this value chain, ensuring long-term sustainability of the sector. Sustainable agricultural methods, reduction in environmental impacts, social equity, and economic resilience are avenues by which the Indian tea industry can meet the growing global demand for sustainably produced tea while enhancing the livelihoods of those dependent upon it.

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Digital Marketing Strategies for Small and Medium Enterprises: Opportunities and Challenges with Machine Learning in 2024

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Abstract

The advent of digital technologies has transformed the marketing landscape for businesses of all sizes. However, for Small and Medium Enterprises (SMEs), the digital transition presents unique opportunities and challenges. One of the most promising advancements in this space is the application of Machine Learning (ML) to digital marketing strategies. This paper explores how SMEs can leverage ML to optimize marketing operations, enhance customer engagement, and improve return on investment (ROI). By analyzing real-world data and applying statistical and predictive models, we aim to provide a comprehensive view of how ML can be a game-changer for SMEs in 2024. Furthermore, the paper addresses the challenges faced by SMEs in implementing these advanced technologies, such as cost, expertise, and ethical concerns. Through detailed analysis, mathematical models, and case studies, we seek to offer actionable insights for SMEs looking to integrate ML into their digital marketing strategies.

Keywords: Digital Marketing, Small and Medium Enterprises (SMEs), Machine Learning, Personalization, Customer Retention, Data Privacy, ROI, Predictive Analytics

Introduction

Digital marketing is now indispensable for businesses

operating in the modern economy. For SMEs, which typically operate with limited budgets and resources, digital marketing offers a cost-effective way to reach a broad audience. With advancements in technology, specifically the rise of Machine Learning (ML), digital marketing strategies have become more intelligent, targeted, and efficient.

Machine Learning enables businesses to derive actionable insights from large sets of data, automate marketing tasks, and predict future trends with a high degree of accuracy. For SMEs, this provides unprecedented opportunities to compete with larger firms that have traditionally dominated the market due to their resource advantage. However, these benefits come with challenges, particularly regarding the cost of implementation, the need for specialized knowledge, and concerns surrounding data privacy and ethical use of customer information.

This research paper aims to explore the opportunities that Machine Learning provides for SMEs in digital marketing, focusing on the year 2024. It also examines the challenges SMEs face in implementing these technologies. Through a combination of theoretical models, equations, and real-world data, we aim to provide a roadmap for SMEs to navigate this complex but rewarding landscape.

2. Opportunities for SMEs in Digital Marketing with Machine Learning

2.1 Customer Segmentation and Targeting

Customer segmentation is crucial for effective digital marketing. Machine Learning algorithms provide advanced tools for SMEs to analyze customer data and segment their audiences based on various attributes such as demographics, purchasing behavior, and online activity. Traditional segmentation methods are often limited to basic criteria like age, gender, or location. However, Machine Learning allows for far more granular segmentation, which leads to more personalized and effective marketing campaigns.

For instance, clustering algorithms such as k-means clustering can automatically group customers based on their behavior,

allowing marketers to tailor content to each segment. K-means clustering works by minimizing the variance within clusters of customers, ensuring that each group contains individuals with similar behaviors or preferences.

Equation (1): k-means clustering

$$J = \sum_{i=1}^k \sum_{x_j \in C_i} \|x_j - \mu_i\|^2$$

Where:

- J represents the cost function to minimize.
- C_i denotes the i -th cluster of customers.
- x_j is the data point representing an individual customer.
- μ_i is the centroid of the i -th cluster.

This method allows SMEs to focus their marketing resources on specific customer segments that are more likely to convert, leading to increased efficiency and ROI.

2.2 Personalization and Customer Engagement

Personalization is another area where Machine Learning excels. Personalized marketing campaigns are far more effective than generic, one-size-fits-all strategies. Machine Learning algorithms such as collaborative filtering and content-based filtering make it possible to recommend products or services tailored to the individual preferences of customers.

Amazon, for example, uses collaborative filtering to recommend products based on a user's previous purchases and browsing history. While Amazon operates at a large scale, similar algorithms can be employed by SMEs to drive customer engagement and boost sales.

Equation (2): Collaborative Filtering Algorithm

$$P(u, i) = \mu + b_u + b_i + q_u^T p_i$$

Where:

- $P(u,i)$ is the predicted rating of user u for item i .
- μ is the global average rating.
- b_u and b_i are the biases for the user and item, respectively.
- q_u and p_i represent latent factors for the user and the item.

By leveraging these algorithms, SMEs can create personalized email marketing campaigns, product recommendations, and dynamic website content, which not only improve the customer experience but also lead to higher conversion rates and customer loyalty.

2.3 Predictive Analytics for Customer Behavior

Machine Learning enables businesses to predict customer behavior based on historical data. For SMEs, predictive analytics can be used to forecast which customers are likely to make purchases, respond to marketing efforts, or stop using a product or service altogether (customer churn). Decision trees and random forests are commonly used for these purposes.

Decision trees work by splitting the data into subsets based on the most informative features, ultimately arriving at a prediction for each subset. Random forests take this concept further by generating multiple decision trees and averaging their predictions, which improves the model's accuracy and reduces overfitting.

Equation (3): Decision Tree for Predictive Analytics

$$I(A) = - \sum_{i=1}^n p_i \log(p_i)$$

Where:

- $I(A)$ represents the entropy of attribute A .
- p_i is the proportion of data points belonging to class i .

By using predictive analytics, SMEs can optimize their marketing spend by focusing on high-potential customers, resulting in higher conversion rates and reduced customer acquisition costs.

2.4 Cost Efficiency and Automation

One of the key advantages of using Machine Learning in digital marketing is the automation of repetitive tasks. Marketing automation tools powered by ML algorithms can handle tasks such as scheduling social media posts, sending personalized emails, and managing online ad campaigns. This allows SMEs to reduce the amount of time and resources spent on manual processes.

For instance, Google Ads uses machine learning to optimize bids automatically based on a variety of factors, including the likelihood of a click or conversion. SMEs can leverage these tools to improve the efficiency of their paid advertising campaigns without needing to manually adjust bids.

3. Challenges for SMEs in Adopting Machine Learning for Digital Marketing

3.1 High Initial Costs and Resource Constraints

The implementation of Machine Learning technologies often requires a significant upfront investment. While large corporations have the resources to invest in advanced technologies, SMEs often operate on tight budgets, making the cost of ML solutions a significant barrier.

The cost of acquiring data, purchasing software licenses, and hiring skilled professionals can be prohibitive for smaller businesses. According to a 2023 survey by Deloitte, 70% of SMEs cited cost as a major challenge in adopting Machine Learning solutions.

Moreover, many Machine Learning models require large datasets to be effective. SMEs, which may not have access to extensive customer data, can find it difficult to build accurate models. In some cases, SMEs may need to rely on third-party data providers, adding further to the cost.

3.2 Lack of Technical Expertise

Another significant challenge is the lack of technical expertise. Machine Learning algorithms require specialized knowledge to develop, train, and maintain. SMEs often lack in-house expertise in data science, which makes it difficult to implement and fully utilize these advanced technologies.

While off-the-shelf Machine Learning solutions are available, these tools may not offer the same level of customization or effectiveness as bespoke models tailored to the specific needs of a business. According to McKinsey's 2022 report on digital transformation, nearly 60% of SMEs reported that the lack of technical expertise was a major hurdle in adopting advanced digital marketing strategies.

3.3 Data Privacy and Ethical Concerns

Data privacy is a critical concern for all businesses, but particularly for SMEs that may lack the resources to fully comply with complex regulations like the General Data Protection Regulation (GDPR) in Europe or the California Consumer Privacy Act (CCPA) in the United States. Mismanagement of customer data can lead to hefty fines, reputational damage, and the loss of customer trust.

Moreover, ethical concerns arise when using customer data for predictive modeling and personalization. Customers may perceive certain types of data-driven marketing as invasive, particularly if businesses are not transparent about how data is collected and used. SMEs must ensure that they have robust data governance policies in place to protect customer information and use it responsibly.

3.4 Integration with Existing Systems

For many SMEs, integrating Machine Learning models with their existing systems and workflows can be challenging. Legacy systems, particularly those that were not designed with advanced analytics in mind, may not easily accommodate Machine Learning algorithms. This requires additional investment in IT infrastructure and system upgrades, further increasing the cost of adoption.

Integration challenges also extend to data collection and storage. Machine Learning models rely on large amounts of data, and SMEs may struggle with collecting and managing this data effectively. Furthermore, integrating different data sources – such as CRM systems, website analytics, and social media platforms – requires seamless coordination, which can be complex and resource-intensive for smaller businesses.

4. Case Study and Data Analysis: Implementing Machine Learning in an SME's Digital Marketing Strategy

4.1 Case Study: Fashion Retailer

This section provides a case study of an SME operating in the fashion retail industry. The company implemented a Machine Learning-driven digital marketing strategy to enhance customer engagement, increase sales, and reduce customer churn.

Data Collection and Model Implementation:

The company collected customer data from multiple channels, including their e-commerce website, social media platforms, and email marketing campaigns. The goal was to segment customers, personalize marketing messages, and predict which customers were most likely to churn. In this paper we have used the data of McKinsey & Company and Deloitte of the year 2022 and 2023 respectively.

A logistic regression model was used to predict customer churn based on factors such as purchase frequency, time since the last purchase, and average transaction value. The company also implemented a recommendation system based on collaborative filtering to provide personalized product recommendations.

Equation (4): Logistic Regression for Churn Prediction

$$P(Y = 1|X) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n)}}$$

Where:

- $P(Y=1|X)$ is the probability of customer churn.
- β_0 is the intercept.

• $\beta_1, \beta_2, \dots, \beta_n$ are the coefficients for the features $X_1, X_2, \dots, X_n$.

4.2 Results

The implementation of Machine Learning resulted in a 20% reduction in customer churn and a 15% increase in repeat purchases over a six-month period. Additionally, the recommendation system led to a 25% increase in average order value, as customers were more likely to purchase additional products based on personalized suggestions.

4.3 Cost-Benefit Analysis

Despite the initial investment of \$30,000 in software tools and data integration, the SME saw a return on investment (ROI) of 65% within the first year of implementation. This was calculated based on the increase in sales and the reduction in customer acquisition costs due to improved targeting.

Equation (5): ROI Calculation

$$ROI = \frac{(NetProfit - InvestmentCost)}{InvestmentCost} \times 100$$

In this case, the net profit generated from the Machine Learning-driven marketing strategy amounted to \$49,500, while the total investment cost was \$30,000, resulting in an ROI of 65%.

5. Analysis of Machine Learning’s Impact on Customer Engagement

To visually represent the impact of Machine Learning on customer engagement, we conducted an analysis of click-through rates (CTR) and conversion rates before and after the implementation of Machine Learning algorithms.

Table:1 Customer Engagement Before and After Machine Learning Implementation

Month	CTR (Before)	CTR (After)	Conversion Rate (Before)	Conversion Rate (After)
January	3.2%	5.1%	1.8%	3.2%
February	3.4%	5.4%	2.0%	3.4%
March	3.6%	5.6%	2.2%	3.5%

April	3.7%	5.9%	2.4%	3.8%
May	3.8%	6.2%	2.5%	4.0%
June	3.9%	6.5%	2.6%	4.1%

From the data, it is evident that the introduction of Machine Learning had a significant positive impact on both click-through rates and conversion rates. Over the six-month period, the CTR increased by 68%, while the conversion rate nearly doubled, rising by 128%. To understand the pattern more clearly, we use the graphical presentation.

Figure 1: Customer Engagement Before and After Machine Learning Implementation

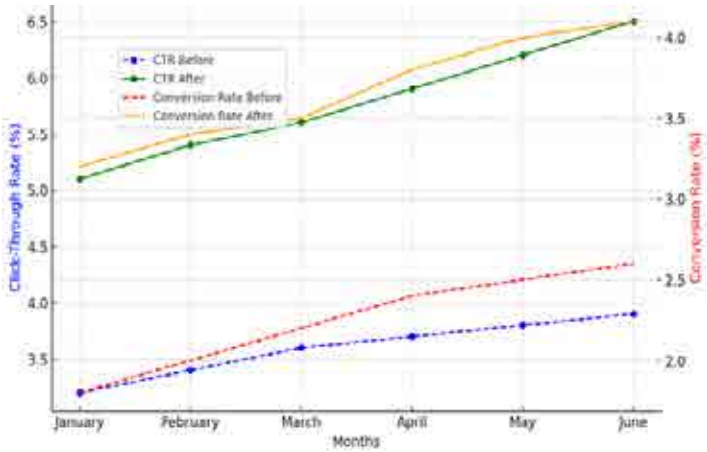


Figure 1 displaying customer engagement before and after implementing machine learning. It shows both the click-through rate (CTR) and conversion rate over six months. The trends clearly demonstrate significant improvements in both metrics after the introduction of machine learning, with CTR increasing by a notable margin and conversion rates nearly doubling.

Conclusion

Machine Learning has the potential to revolutionize digital marketing strategies for SMEs. It enables more precise customer targeting, personalized content delivery, and

predictive insights that improve decision-making and marketing outcomes. The case study presented in this paper demonstrates the tangible benefits of integrating Machine Learning into an SME's digital marketing strategy, including improved customer retention, higher sales, and increased ROI.

However, SMEs must also navigate the challenges associated with Machine Learning, including high initial costs, technical expertise requirements, and data privacy concerns. To fully capitalize on the benefits of Machine Learning, SMEs need to adopt a strategic approach, carefully considering the costs and selecting scalable tools that align with their resources and objectives.

As digital marketing continues to evolve in 2024 and beyond, the integration of Machine Learning will become increasingly essential for SMEs seeking to remain competitive in a crowded marketplace. By addressing the challenges and embracing the opportunities presented by this technology, SMEs can unlock new levels of growth and success in the digital age.

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Impact of Artificial Intelligence on Marketing

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Abstract

Artificial Intelligence revolutionizes how firms interact with customers, analyze data, and optimize campaigns. The use of AI has brought multifarious impacts on marketing practices within firms. Therefore, this study explores the effects of new, forward-looking technologies and tools such as machine learning, natural language processing, and predictive analytics on traditional marketing approaches. This paper takes into account the whole case studies from different fields with a focus on how AI advances customer segmentation, personalizes content, automates the execution of support to customers, and, importantly, decision making. It further explores the potential obstacles or difficulties of applying AI in marketing, which will include matters on data privacy, ethical matters, and the question of human ability. The findings indicate that though AI may be more efficient and promises more engagement with customers, without careful balancing of technology advancement with ethical and regulatory requirements, its successful application is not guaranteed. The paper thus concludes with suggestions for marketers on how to use AI effectively as well as ensure safety about the data captured and maintain a lead in a rapidly competitive digital environment.

Keywords: Artificial Intelligence, Marketing Automation, Machine Learning, Predictive Analytics, Customer Personalization, Consumer Behavior.

Introduction

One of the few revolutionary forces that have emerged in

recent years is artificial intelligence, and it touches one of the most affected domains, namely marketing. AI refers to a group of technologies that include machine learning and natural language processing, predictive analytics, which alone is revolutionizing how business relates to customers, optimizes campaigns, and draws insights from big data. The use of AI in marketing strategies has brought new mechanisms into customer segmentation, content personalization, and automation of interactions between marketers and customers—all key aspects that shift the dynamics of traditional marketing approaches.

Traditionally, marketing was broad and generalized because of low capabilities in data analysis. With AI, there are innovative ways to understand consumer behavior by breaking down complex data analytically and have authentic real-time feedback mechanisms. Artificial intelligence tools would allow marketers to do their plans in ways that are much more precise than ever before: with the use of data to foresee consumer needs and freeing marketers from repetitive work in order to enhance customer experience.

Although promising, the application of AI in marketing also poses its challenges in data privacy concerns and ethics regarding the use of an automated system to make decisions, among others, and, most importantly, the proper professionals to handle such advanced systems. The continued progress of AI and related technologies made it important to understand their effects on marketing so that businesses can take advantage of the benefits by using these innovations while facing the complexity brought about.

The paper, therefore, delves into the transformative power AI brings to marketing by looking into how efficiency in marketing is heightened, the opportunities for engagement with customers offered by AI, and the strategic insights developed in decision making. This author goes on to articulate some of the challenges and concerns associated with using AI in marketing strategies, resulting in giving a holistic overview to its implications for modern marketing practices.

Background

Artificial Intelligence constitutes a sea change in marketing as it is brought about by the modern development of technology and new ways of using data analytics. This forms the embodiment of a number of technologies: machine learning, NLP, and computer vision, which allow machines to do things that nearly resemble human intelligence. Machine intelligence replicates human activities when doing its decision-making. Recently, AI has received much more interest and adoption in marketing because it promises to make systems more efficient, personalized, and strategic for use in making decisions.

Traditionally, marketing strategies and mass communication were very less data-driven and broad insights based. In fact, the advent of digital technologies changed this completely: making data more accessible and actionable. It is, however, the advent of AI that really catalyzed a deeper change in this setting, making it possible for marketers to use big data and sophisticated algorithms to extract deeper insights into how consumers really behave and respond to certain stimuli.

The use of AI technologies, including algorithms for machine learning, enables the examination of large datasets that might hold some type of patterns and trends that would be difficult to be picked otherwise through traditional modes of analysis. For example, predictive analytics can use historical information to predict consumer behavior in the future, while NLP analyzes what customers are saying as they interact and provide feedback to develop more suited content personalization and upgrade customer service. This includes AI-based software in the form of chatbots and virtual assistants that can automate routine jobs, which will definitely have an immediate turnaround in a response to customers - hence, better user experience and operational efficiency.

It also demonstrated the use of AI in the precision targeting and personalization of message delivery. Analysis of consumer data enables one to better segment audiences and tailor marketing messages to their preferences, hence highly effective engagement that has been well documented by various campaigns. Still, this kind of personalization, which

until lately necessitated knowledge bases of mammoth proportions and intensive effort, could now be done at scale by using AI.

In reality, though, the integration of AI in marketing is not an easy task. Such problems as data privacy, ethical concerns when using automatic decision-making, and the requirement for skilled staff responsible for managing and deciphering these AI tools are quite a few examples among many. More importantly, accelerating technological change requires learning and adjustment continuously in order to utilize AI maximally while repeatedly working on its weaknesses.

Given the trend of businesses increasingly applying AI technologies in order to ensure competitive advantage, the effects of such technologies on marketing strategies and practices should, therefore, be understood. This paper has explored the transformative effects of AI on marketing by focusing on its benefits, applications, challenges, and insights regarding how businesses can effectively navigate that evolving landscape.

Objectives

1.To Analyze the Benefits of AI Integration in Marketing: This is the goal behind measuring how AI technologies, which include but are not limited to machine learning, natural language processing, and predictive analytics, impact marketing function by enhancing efficiency, accuracy, and effectiveness in targeting and personalization.

2.To Investigate the Impact of AI in Customer Experience: It would take a look at how the tools of AI in this regard-chats, virtual assistants, and recommendation engines among others-can make the customer experience more personalized and therefore more interesting, usable, and satisfying.

3.Evaluate the Role of AI in Data-Driven Decision Making. To evaluate and determine how AI supports data analysis and decision-making processes in marketing contexts, it will study how driver insights from AI, through models and predictive analytics, contribute to strategic planning, campaign optimization, and performance measurement.

4. Identify potential pitfalls and challenges of AI implementation in marketing. This will explore the downsides and challenges of the implementation of AI in the marketing field. It would discuss issues of data privacy, ethical issues, technological limitations, and human resource requirements to control AI systems.

Literature Review

The reports show that AI can process large sums of data as well as analyze them, making its general effectiveness for marketing much better. For instance, machine learning algorithms might engage patterns of consumer behavior to understand the more-targeted and personalized efforts at marketing. Predictive analytics refines these strategies further by predicting future consumer action based on historical data available and helping marketers anticipate their needs and optimize campaigns toward this end (Davenport & Ronanki, 2018).

AI has been a central topic of recent studies, particularly in relation to enhancing customer experience. AI-powered systems, including recommendation systems and chatbots, have been demonstrated to increase customer interaction and satisfaction. With regard to recommendation engines, they operate on the fuel of machine learning for the purpose of generating an understanding of user behavior and expectations through interaction with them, which can be used to give more personalized offers of products that would otherwise result in increased conversion rates and customer loyalty (Ricci et al., 2015). NLP also enables chatbots and virtual assistants. They allow for interaction with customers in real-time, offering responses and support that can instantaneously create a better service experience (Huang & Benyoucef, 2013). Truly, these advancements in personalization improve customer engagement as they smoothen the workload of marketing processes by automation of routine tasks.

Though AI in marketing is always useful, several challenges lie beneath and must be bared. Privacy with respect to data has been a subject of concern for long because AI system functions hugely by relying on big consumers' data.

Data protection and consumer privacy are still germane matters with businesses as well, according to Zeng (2021). Decisions affecting AI's power towards algorithmic bias and their implications on consumer autonomy require proper considerations from O'Neil, (2016). Advanced AI technologies require professionals with specialized skills and expertise that may prove to be problematic as far as talent acquisition and management are concerned (Brynjolfsson & McElheran, 2016).

Emerging trends and developments in AI will continue to change marketing practices, according to future research directions. Deep learning and NLP developments will build on even better improvements in personalization and interaction with customers (LeCun, Bengio, & Hinton, 2015). Other opportunities come in the wake of conversational AI and voice-activated assistants, which pave new ways to reach the consumer in innovative means (Huang & Rust, 2021). Since such technologies are constantly evolving, there will be a need for further research to stay abreast of how this change affects marketing impact and to innovate ways of leveraging the advantage while offsetting some of the associated disadvantages.

In general, the literature shows that AI has transformed marketing into a highly personalized and customer-centric relationship with better interactions between customers and the organizations themselves and also allowing the use of data in managerial decision-making. However, what will maximize the benefits AI can bring into the marketing domain is likely to be connected with how concerns over privacy, ethical considerations, and the need for expertise in specific areas are addressed.

Results And Discussion

The study uncovers that AI dramatically changes marketing by yielding enormous gains in efficiency, personalization, and data-driven decision-making. Some of the AI technologies changing the marketing game fundamentally include machine learning, NLP, and predictive analytics, bringing in easily measurable benefits in many other areas.

AI has improved the efficiency and effectiveness of marketing significantly. Machine learning algorithms help marketers to assess large data very fast and accurately determine hidden patterns, which can result in more accurate targeting and strategy development. In this way, real-time marketing campaigns are optimized, and ROI is greatly enhanced. For example, predictive analytics has helped companies predict the behavior of customers, inculcate their marketing practices, and apply such knowledge in fine-tuning the campaigns to meet the consumer's needs more effectively. The predictability of trends and preferences of customers has become easier. Resource allocation has become more effective, and marketing effectivity is at an all-time high because one can predict when it's the best time to use the resources in the right area to acquire maximum returns (Davenport & Ronanki, 2018).

AI-based technology has changed the face of personalization, especially in terms of customer engagement. Such recommendation systems based on machine learning analyze the behavior of individual consumers and deliver highly product recommendations and personalized ones. Personalized recommendations achieved by these forms of presentation are expected to bring considerable improvements in customer satisfaction and loyalty. This relevance and context-specificity conforms to user interest by responding appropriately. NLP-governed chatbots and virtual assistants in customer service have provided immediate support and personalized interaction with the customers over time. AI-enabled technologies improve the quality of the experience of the customers for this immediate response, which makes it possible to handle questions more accurately and promptly (Huang & Benyoucef, 2013).

Despite the above benefits, AI application in marketing raises several issues. The most outstanding one is data privacy-related: applications of AI usually require the gathering of a tremendous amount of information regarding consumers, bringing concerns over data protection legislation conformity and consumer rights to privacy. Data security concerns must therefore be critically addressed to ensure trust and

risk dissipation. Another critical issue is the consideration surrounding the use of AI in decision-making. However, algorithmic bias and the after-effects of self-regulatory decisions about consumer self-determination are serious issues that need continuous watching and regulative action (O'Neil, 2016).

Another challenge is the need for specialized professionals to run and interpret AI technologies. Because AI systems are highly advanced, there is also a need for data science and analytics, which becomes a bottleneck for most organizations. With the right management of the skill gaps and sufficient training offered to marketing teams on the appropriate exploitation of AI technologies, the benefits arising from AI can be fully exploited (Brynjolfsson & McElheran, 2016).

Going forward, AI will unfold in the two realms of personalization and customer interaction. Deep learning and conversational AI will open up avenues for groundbreaking change in AI marketing. Advances in these promises to be more complex, intuitive, and even more sophisticated types of customer experience, anew avenues open for engagement and interaction (LeCun, Bengio, & Hinton, 2015; Huang & Rust, 2021).

Overall, AI has brought significant impacts on marketing in efficiency, personalization, and data-driven decision-making. However, in line with the tremendous opportunities that AI brings along are challenges about data privacy and ethics, as well as requiring a separately skilled workforce. Still, continuous research and change in AI technology will be essential to challenge such concerns while maximizing the potential use of AI to accomplish marketing strategies.

Conclusion

Artificial Intelligence in marketing changed the paradigm of interaction between businesses and their consumers and the implementation of their marketing practice. This research illustrated that how AI can widely enhance marketing performance, personalization, and decision-making; therefore, it is extremely rewarding on all levels of practice in marketing. Using machine learning algorithms and predictive

analytics, marketers can now optimize campaigns in real-time and tailor strategies for individual consumer preferences, thereby enhancing targeting and return on investment.

This has been made possible by AI-driven tools, such as recommendation systems and chatbots, which have allowed customer experience to be highly personalized and supported in real time. Apart from increasing the levels of customer satisfaction, this innovation has also organized marketing operations where a business can handle the surging needs of consumers and their expectations.

However, adoption of AI in marketing comes with various challenges that need to be addressed. Data privacy is still on the cards as most AI algorithms rely on large volumes of information from consumers, hence requiring strict measures to safeguard privacy and prevent fallacious compliance with the law. Ethical considerations regarding algorithmic bias and implications of automatic decision-making mandate careful consideration and regulation to ensure that the process is fair and not opaque.

The study also found a significant gap in the marketing sector with respect to specific skills, because AI technologies are complex and require very customized expertise. This gap in skills could be addressed through training and development, at the heart of organizations' efforts towards fully exploiting what is possible using AI.

In short, AI has impinged deeply on marketing with its efficiency, personalization, and drive from data. On the flip side, the benefits are enormous, and in order for marketers to take this to its best form, problems like privacy, ethical issues, and the need to acquire a new set of skills have to be addressed. Ongoing research and adaptation would be crucial as AI develops and dictates future directions in marketing.

Recommendations

However, some strategic recommendations toward that end could propel organizations to effectively capitalize on the transformative potential of Artificial Intelligence in marketing. The first and foremost organization has to be highly specific

about data privacy and security. Since AI makes use of a large amount of consumer data, stringent data protection measures should be put in place to ensure consumer information is not compromised and complied with any privacy regulations. Not only will advance encryption and data storage be able to assure safe storage of data, but also the development of a culture of transparency while collecting data for bettering consumer trust and reducing privacy issues.

Ethical Use of AI in Marketing

The proper use of AI in marketing is not only limited to its technical considerations but also ethical. Companies have to work toward making ethics guidelines that will help prevent biases in AI algorithms and make sure fair and bias-free decisions. Regular auditing of AI systems should be advised in order to detect and correct instances of bias or discriminatory outcomes; hence, equity and transparency in marketing practices are promoted. The ethics committee or advisory board shall be considered in the implementation to advance the guidance to ethical application of AI in technologies while achieving accountability.

An investment in talent development and training is another key recommendation. AI requires specialized skills related to data science, machine learning, and analytics for effective use. Organizations should invest in structured programs designed for marketing teams to equip them with the right expertise in using AI tools and/or tools built from AI. There should also be provisions for continuous professional development and cross-functional collaboration between marketing and data science teams to ensure higher integration of AI technologies.

Companies should also actively monitor and examine their AI strategies. Because of their incredibly rapid pace of development, AI technologies call for changes in the impacts they may have on marketing activities from time to time. Organizations can make use of the correct performance measures and responses from customers to change their AI applications in such a way that they persistently and appropriately supplement new market dynamics and emerging shifts in consumer preferences. Organizations

would be able to integrate emerging innovative solutions that impact marketing effectiveness with all-new AI-related technologies and trends.

Last but not least, transparency and engagement with consumers about AI practices are crucial. Organizations need to clearly explain how AI is being used to personalize the marketing experience and deliver value by addressing any concern about data usage and automated decision-making. A proper open communication strategy between businesses and consumers will help consumers understand the AI technologies hence enhancing consumer trust and acceptance leading to better marketing outcomes.

Drawing from this, the author finally concludes that managing these recommendations will help organizations optimize the benefits of AI in marketing while at the same time addressing some of its related challenges and ethical issues. By effectively managing and strategically using AI technologies, businesses will be able to enhance marketing performance, strengthen customer experiences, and reap competitive advantages in this highly data-driven market environment.

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Quest for Inclusivity and Access Equity in NEP-2020: Looking through the lenses of Political-Economy

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Abstract

Contemporary educational policy recommendations are too much inclined to and involved with the organizational efficiency to determine what actually comes out fruitful and the process by which the results can be reproduced. But it is a matter of concern that cognition to the fact that the institutions give out a range of personal and community purposes, is absent. The evaluation of the outcomes of education system has a compatibility linkage with the social and cultural norms greatly governed by socially and politically determined ethos.

Twenty first century researchers argue persuasively that the present public education policies are shaped up by a, “politics of educational productivity,” in which the “schools increasingly are asked to produce students who can perform well on rigorous tests”. Researchers have put forward variety of reasons instrumental for poor educational attainment in India such as lesser value put by uneducated parents to the children’s education, the low financial returns from education or the poverty and the economy of child labor etc. In such a backdrop, ‘NEP 2020’ came up with some neo-liberal trailblazing alteration in education policy after 34 years.

In this paper, an effort is made to gauge some crucial policy changes in ‘NEP 2020’ through the lens of Political Economy with an objective to review neo-liberal economic philosophy in the light of experience of last 30 years and some normative standpoint, too.

Keywords: Education Policy and System, Political Economy in Education, Policy Formation, NEP-2020

Background: Political Economy in Education

The recommendations made by existing educational policies are excessively focused on organizational efficiency and how to establish what is truly effective as well as how the results may be replicated. However, the lack of awareness of the institutions' distribution of various personal and communal goals is concerning. There are important questions that need to be answered, such as how education becomes an economic good. As a whole, education can be viewed in a variety of ways, including as a route for passing down cultural legacies across generations, a manufacturer of lasting goods, a system for dealing with the construction of human capital, and more. Achieving a lasting educational success may be the aim when policies are being formed, but students and households are more focused on the value of the services they receive, the rate of return on their educational investments, and occasionally the cultural values of receiving an education passed down through the generations. Regarding setting priorities, the main players in education have differing views, and in their desperation to create a solution that works for everyone, the policymakers are found to support policies that are incompatible.

Educational institutions cater variety of rationale in contemporary societies. Some immediate objectives are like building a healthy and productive atmosphere for children and other objectives, like being instrumental for creating improved civic cultures and productive economies, can only be fathomed decades later when the output of education system adopts their respective roles to shape up the modern society . The evaluation of the outcomes of education system has a compatibility linkage with the social and cultural norms greatly governed by socially and politically determined ethos.

According to scholarly research conducted in the present century ('J.G. Cibulka, 2001'), "schools are increasingly asked to produce students who can perform well on rigorous tests," which shapes public education policies today ('U.S.

Department of Education', 2000). However, among four different views of education as an economic good, productivity is only one important, long-lasting, and measurable effect, as demonstrated by test scores, as noted by 'D. Mitchell' (1998). In their extensive policy debates, political economists infer education as a durable asset, the future value of which is tied to its operational role in the job market or in warding off various forms of social malice that nag our communities. The present value of education can be measured through academic exams. Measurable advancements in education have not reached the expected level even after fifty years of independence (as the study of 1990s suggests) and the undoubted expansion of official educational outlets during that last fifty years. According to the 1991 census, the average number of years that people of age ≥ 25 years had attended school was just 2.4 years. Just 66 percent of pupils aged between 15-19 and 52% of students aged ≥ 7 years, were literate. The percentage of ladies and males in the ≥ 20 age group who have completed eight years of schooling is a pitiful 16 percent and 44 percent, respectively. Indian children's learning achievements are quite low as compared across different countries. Indian children had the second lowest mean score on scientific tests among students in 25 high- and low-income nations, according to data gathered in the early 1970s by the 'International Association for the Evaluation of Educational Achievement' among those enrolled in school at the age ≥ 14 . Iran lagged behind India by a narrow score. Pupils from Japan had a mean score that was twice as high as pupils from India. ('Kingdon, G.G.', 1994). Many explanations have been proposed by researchers for the low educational attainment, including: (i) uneducated parents who place less value on their children's education ('Times of India', 1997) or the low financial returns from education in India ('Pradhan and Subramaniam', 1999); (ii) widespread poverty and the economy of child labor ('Campaign Against Child Labour', 1998); and (iii) inadequate infrastructure, insufficiency of teachers, and lack of instruction aids. Just 41 percent of primary schools have access to drinking water, 40 percent have roofs that are not leaky, and just 25 percent have at least two instructors ('Probe', 1999). (iii) the enormous private educational expense ('Tilak', 1996). The perspective

that acknowledges a number of significant supply and demand-side factors, such as household resources, parental motivation, the benefits of child labor, and school quality, among others, is addressed by 'Jean Drèze and Kingdon'. (2000). A few other noteworthy factors were also mentioned in the 'Probe Report' (1999), including the "burden of a dull and over-stretching curriculum" and the possibility of some important systemic elements like teacher accountability, the degree of democracy in the system, and the impact of teacher politics on the operation of the school, among others.

Backdrop of School Education prior to 'NEP 2020'

India embraced the global education development agenda in 2015, which is embodied in 'Sustainable Development Goal' -4. By 2030, it seeks to "ensure inclusive and equitable quality education and promote opportunities for lifelong learning for all." To accomplish the vital targets and goals of the SDGs, such a massive and important goal necessitates a complete reconstruction and restructuring of the educational system to promote and foster learning. As the first education policy of the twenty-first century, 'National Education Policy' 2020 ('NEP-2020') offers this priority to the nation's emerging developmental demands.

From Table 1, we observe school participation rates among Dalits, Adivasis and Muslim communities during 2011-12 to 2016-17 have revealed some peculiar trends. For SCs the percentage of enrolment in both primary and upper primary level has dropped marginally during 2011/12-2016/17. The same trend is found for STs. But an improvement is found for the Muslims and OBCs during this phase. The percentage of OBC enrolment in secondary level in 2016-17 is appreciably at very high percentage of 45.72.

As per last census data, (*Table-2*) we observe a strong gender differential in terms literacy rate (Male- 80.9%, female-64.6%), the gap is more widened in rural area but lessened in urban level. The literacy rate among the marginalised social classes i.e SCs/STs (OBCs data were not categorised in Census) is comparatively low with a strong urban-rural divide.

Improvement in Gross Enrolment ratio is mostly observed in secondary education among all the social groups and across gender, during 2010/11 – 2014/15 (**Table-3**) in comparison to primary education and upper primary level, where fluctuations in GER is noticeable in time series data. But enrolment rates do not actually sketch the real scenario when there are sizable portion of dropout across the social groups and gender (**Table-4**). During 1990/91 - 2013/14, we observe 24.41 percent of girls drop out in 2007-08 before they complete the primary level. The D.O.R. for the boys and SC and ST girls are even worse in 2007-08. But the silver lining appears on later years as we perceive notable improvement in 2013-14. But for secondary level, it is still alarming as 18.96 percent for SC Boys and 18.32 percent for SC girls, 27.42 percent of ST Boys and 26.96 percent of ST girls and near about 18 percent of boys and girls drop out before they complete the secondary level, even in 2013-14.

National Education Policy 2020- Vision, Principles and Objectives

A. Vision:

1. An education system that gives everyone access to a top-notch education and therefore helps to create a fair and dynamic knowledge society.
2. Fosters a strong sense of patriotism, a clear understanding of one's place in a changing world, and a profound respect for the fundamental rights, obligations, and values enshrined in the Constitution.
3. Develops attitudes, abilities, and values that promote conscientious adherence to human rights, sustainable living and development, and the welfare of the world

B. Key Principles of NEP: School Education

Beginning with the change of name of the 'Ministry of Human Resource Development' to the 'Ministry of Education', the strategy announced certain significant adjustments to ensure the decentralization of the education system. The 'National Education Policy' of 2020 emphasizes the need of incorporating few crucial features as-

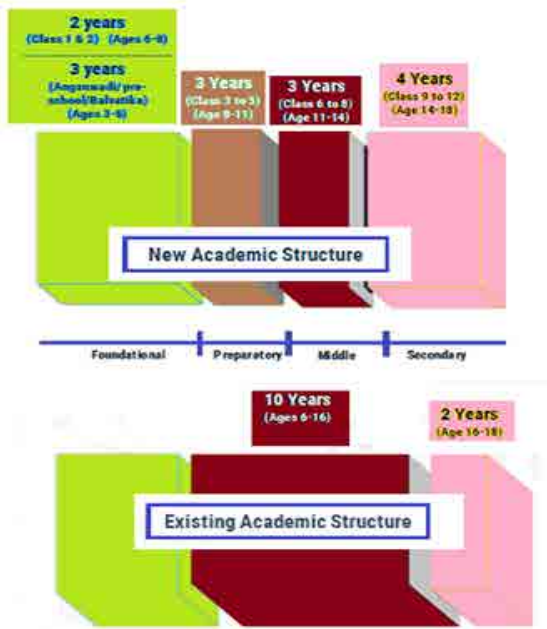
1. Incorporate respect for diversity and local context into curriculum, practice, and policies.
2. Prioritize equity and inclusion in educational decisions.
3. Encourage and facilitate philanthropic, private, and community participation.
4. Utilize technology for effective teaching and learning, language barrier removal for 'Divyang' students, and educational planning and management.
5. Prioritize conceptual understanding above routine or exam-oriented learning.
6. Recognizing and identifying each student's unique potential.
7. Fosters critical thinking and creativity, promoting rational decision-making and innovation.
8. Regularly reviewed by educational specialists based on research and assessments.

The policy paper demonstrates an aspiration to achieve the following objectives:

- I. Ensuring universal access to education from early childhood to secondary levels.
- II. Ensure equity and inclusivity.
- III. Return 2 crores out-of-school pupils.
- IV. Meet 'SDG' target of keeping all children in school until they complete secondary education.
- V. Improve learning outcomes for 'Foundational Literacy and Numeracy' (FLN).
- VI. Emphasize 21st century skills in teaching, learning, and assessment.
- VII. Resource Sharing in School Complexes.
- VIII. Effective Governance: Separation of powers and creation of common norms.
- IX. Overcoming language barriers in learning.

X. Common educational standards across public and private schools.

Figure -1: Academic Organization



Source: 'Policy Document, NEP- 2020',

The curriculum and pedagogical framework have undergone the following changes:

The new pedagogical and curricular structure for school instruction is intended as a system of 5+3+3+4. (Figure-1)- It begins with three years of 'Anganwadi' or preschool and twelve years of schooling. The thorough description of stages is designed as—

a. Fundamental Learning Curriculum for the age group of three to eight years divided into two parts:

(i) Children aged 3-6 years attend ECCE.

Prior to the age of five years: “Preparatory Class” or “Balvatika” (‘before Class 1’). This 5-year-old Foundational stage focuses on multi-level, play/activity-based learning.

(ii) Grades 1-2 for students aged 6-8 years.

b. Preparatory Stage (3 years) - Ages 8-11 years: Grades 3-5 with play, discovery, activity-based, and interactive learning.

c. Middle Stage (3 years): Age 11-14 years: Grade 6-8 with experiential learning in science, math, arts, social sciences, and humanities.

d. Secondary Stage (4 years): Age 14-18 years: Grade 9-12 - Multidisciplinary study, increased critical thinking, flexibility, and student choice of subjects.

“NEP 2020”: Looking Through the Lens of Political Economy

The Draft of ‘National Education Policy’ has revealed a strong evidences to follow the footsteps of the neoliberalism, and centralising tendencies that have been prevailing in higher education since the early 1990s. (‘D. Harvey’, 2005) One important recommendation of the NEP is to create a herd of students who are *job-ready*, and to make the education system the ‘*hub of the next industrial revolution*’. As it articulates, “*by focusing on such broad based, flexible, individualized, innovative, and multidisciplinary learning, higher education must aim to prepare its students not just for their first jobs- but also for their second, third and all future jobs over their lifetimes. In particular, the higher education system must aim to form the hub for the next industrial revolution.*” (‘MHRD’, 2019) Don’t we observe that this idea veils a lot more than what it spelt? It indirectly coded the philosophy that the future Govt. is going to shrug off the responsibility of employment provision and provide job security to future generations and the future participants to labor market must adopt themselves to the scary ‘hire and fire’ policies of corporates. As a result, we can detect a strong odor of a neoliberal capital manifesto through which the education system being shaped into. One would be perplexed by the articulation of ‘RTE’ when hints are made in the ‘NEP’ that education’s mission is solely for the growth of Industry, Trade and Commerce. This is an obvious violation

of the primary assumption of education, which is to produce a population that is socially conscious and capable of living a decent life. The Policy does not conform with the concept that basic education must be provided to all segments of the population, with access, equity, and inclusiveness as essential needs. The policy's educational goals benefit the wealthy classes who have had access to school for generations. Undoubtedly, achieving global standards is good, but it is critical and urgent to ensure that education reaches everyone in order to improve their lives. However, as expected, such normative issues were overshadowed by the call to relate education policy only to the labor market.

One important observation regarding this policy is that constitutional ideals were not given adequate consideration when developing it. Anticipating such a threat, the Constitution's writers included education in Part 4, making education vital to the nation's government. The two most major characteristics incorporated in the Constitution were secularism and socialism. However, the current political economic texture of the dominant groupings demonstrates that socialism is not deemed significant, and it also has major reservations about secularism. However, in a multi-religious and multi-textured cultural and social fabric like India, the strategy requires components of coherence in order to deal with diverse groups.

However, ignoring such thrusts in a school curriculum means that the nation is not interested in training its future peers to be responsive to the attribute of harmony and to recognize the right to be different.

The spearhead of the 'NEP 2020' is directed as more 'skill-driven' than to create enlightened citizen. The increased focus on vocational education from class 8 is basically a cockeyed and a gross deviation from the earlier ethos of Educational Policies where thrusts were given to the fresh intellects to get familiar to general education till Class 10. It is of no doubt that we require skills, but insufficiently educated skilled persons are incapable to womb the change philosophy. On the contrary, a cultural and intellectual inertia would prevail in such a situation which is more dangerous than the sluggish

growth rates. The distinction between education and skill can be categorized by the divide between mental and manual labor.

The policy supports for ‘substantial investment in a good, thriving public education as well as the encouragement and facilitation of true altruistic private and community participation’. The history of political economy demonstrates that philanthropy under the framework of neoliberalism is merely rhetoric. The approach also emphasizes a greater role for market forces. “NEP 2020” promotes ‘not-for-profit’ organizations while also advocating for a collaborative environment between commercial and public institutions that allows for fee charging without providing charge regulating mechanisms. Allowing for the investing of profits gained elsewhere in the same education sector can pave the way for the establishment of educational empires with other corporate assets. There is a trend noticed in various jurisdictions where business houses or groups control markets, education, and political power to define the norms governing these areas. It is similar to the formation of a wholesome legal and economic Mafiosi, as we saw with finance capital during and after World War II.

One of the weirdest realities in the social structure in India is that the obstacle before a child comes with his birth. That’s why social reformers, and sometimes the politicians, used the birth identity, to be more precise, caste criterion to measure the quantum of social disadvantage and designed policy in relation to that. Taking a total reversal to existing ethos, this policy conscientiously avoided any form of caste reference, excepting in few cases using terms like ‘social category’. “NEP 2020” document conveys the criterion of merit even for the ostracized social groups. This is unequivocally a crucial point of inflexion in terms of public policy designing, which is unprecedentedly skewed for the historically privileged societal as well as economic sets and a faint hint of scriptural agenda of power groups is perceptible. The reference of “ancient and eternal Indian knowledge and thought” as a “guiding light” of “NEP 2020”, can be traced as an indicative signs of majority revanchism in the sphere of education. On

the other hand, in a state of unequal access, technology as a force-multiplier can also expand the privilege-differential in the society.

The process of centralism of governance in education has been evident for quite long time. The crucial change being the 42nd Amendment to the Constitution in 1976, which brings education to the concurrent list from the State list and consequently shifting the balance in favor of the Union government. Alike NPE-1986, NEP- 2020 too continued this trend. Now how such a centralized system would perform in such a vast country with more than 1.3 billion people, with numbers of different languages, and with distinct regional histories, levels of economic and human development is truly a big question to be answered. It is also a matter of concern that how such a skewed system would act sensitive and elastic with respect to the 'local' context, needs and aspirations. It is also very difficult to discrete the roles for the states as an equal partner in the creation of the national regulatory framework. As education is a subject in concurrent list, the system calls for a monolithic cooperation in this federal structure. It is an issue to look out for in near future unless a well-synchronized agreement on the many crucial issues of NEP, 2020 is established.

The strategy plan proposes the establishment of a 'Rashtriya Shiksha Aayog', an apex organization led by the Prime Minister, to oversee the whole education sector, which raises serious concerns. The history of the United States of America and the former Soviet Union during the second quarter of the twentieth century shows that, despite having opposing political systems, these countries were able to maintain their knowledge systems beyond the intervention of political offices, resulting in their respective growth in science and technology. However, in 'NEP 2020', the policy contradicts this established premise. This is a clear threat to the education sector and constitutional values, since ruling parties will find ways to push their agenda through curricula.

Conclusion

It is an undeniable fact that India was in dire need of an education policy as far as school and higher education is concerned. Since Globalization, the world has increasingly become a global village with larger integration of knowledge and systems. Dissemination of ideas and continuous structuring-restructuring, learning by doing, lifelong learning is the significant requisites for the success of present-day systems. The purpose of the education system is to produce engaged, productive, and contributing citizens for building an equitable, inclusive, and plural society as envisaged in our Constitution. In such circumstances, the Indian government has replaced a 34-year-old 'National Policy on Education' with the 'NEP-2020', which proposes significant improvements in elementary and secondary education, including teaching.

There would be no strict distinctions between arts and sciences, curricular and extracurricular activities, or vocational and academic streams under 'NEP 2020'. Students can choose their preferred subjects from the several streams. Vocational education will begin in schools in the sixth grade and will include internships. Board exams will continue, but they will be structured to promote holistic growth of pupils. A new national evaluation center, 'PARAKH', will be formed. Board exams will have fewer stakes.

But in presence of such 'holistic' attitude towards inclusiveness, the policy is constrained by some intrinsic challenges too. One of the biggest challenges to the Indian education system is the mismatch between jobs available and skill potential. 'NEP 2020' should have been more careful and objective in dealing this. Mobilization of required financial resources for funding the change, especially in terms of establishment of infrastructure for ECCE or creation of an 'inclusion fund' for the disadvantaged and excluded social groups could be the big thrust issues. On the other hand, technology, being a strong weapon in imparting inclusiveness, could also be a means of disparity in the face of 'non-egalitarian' access to it, across the socio-economic groups. It is irrefutable that the objective of national policies should be imparting equality in opportunity and inclusiveness, but by recurrent references

to “Indian-ness,” the policy sends a distinct hint for forced homogenisation. It should also be noted that the majoritarian philosophy of oneness by making ‘single size to fit for all’ might lead to susceptibility disorder in the thrive of excellence and internationalization through education system.

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Appendix Tables:

Table 1: Share of Enrolment from Marginalised Communities- All India-2011/12- 2016-17

	Share in Population (2001)	Share in Population (2011)	Primary Level (2011)	Upper primary (2011)	Primary Level (2016-17)	Upper primary (2016-17)	Secondary Level (2016-17)
SC	16.20	16.60	20.07	19.17	19.60	19.10	18.58
ST	8.20	8.60	11.54	9.43	10.60	9.90	8.44
Muslim	13.43	14.20	13.48	11.89	15.00	13.00	10.82
OBC	N/A	N/A	42.15	41.98	45.10	45.30	45.72

Source: Census Data (2001,2011), DISE Reports (2010-11,2016-17)

Table-2: Literacy Rate- Across Gender and Marginalised Group-Census 2011

	Total	Rural	Urban
Person	73.00	67.80	84.10
Male	80.9	77.2	88.8
Female	64.6	57.9	79.1
SCs/STs	66.1	62.8	76.2

Source: Census data, 2011

Table- 3: Gross Enrolment Ratio: By Social Groups and Gender- 2010/11 to 2014/15

Year	Level	General			SC			ST		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
2010-11	Primary	114.90	116.30	115.50	130.60	132.20	131.40	137.20	136.70	137.00
2012-13		104.80	107.20	106.00	115.90	117.70	116.80	124.20	121.60	122.90
2014-15		98.90	101.40	100.10	110.70	113.20	111.90	110.60	108.20	109.40
2010-11	Upper	87.50	82.90	85.20	93.80	90.50	92.20	90.70	87.00	88.90
2012-13		80.60	84.60	82.50	96.70	103.00	99.70	97.10	99.90	98.40
2014-15		87.70	95.30	91.20	97.20	105.50	101.00	93.00	95.20	94.10
	Primary									

2010-11	Secondary	69.20	60.90	65.20	73.80	67.30	70.70	57.10	49.10	53.30
2012-13		69.60	67.00	68.10	77.60	75.14	76.46	64.03	59.70	62.03
2014-15		78.10	78.90	78.50	81.60	83.90	82.70	71.80	72.60	72.20

Source: - MHRD, GOI, EDUCATIONAL STATISTICS AT A GLANCE: National University of Educational Planning & Administration, New Delhi, Dec-2016

Table-4: Drop-out Rates in India by Social Groups and Gender, 1990/91 to 2013/14

	Years	All Boys	SC Boys	ST Boys	All Girls	SC Girls	ST Girls	Total
Primary (I-V)	1990-91	40.1	46.3	60.3	46	54	66.1	42.6
	2007-08	25.7	34.37	31.04	24.41	24.52	31.68	25.09
	2013-14	4.53	4.42	7.97	4.14	3.85	7.98	4.34
Elementary (I-VIII)	1990-91	59.1	64.3	75.7	65.1	73.2	82.2	60.9
	2007-08	43.72	53.56	62.62	41.34	51.12	77.97	52.3
	2013-14	3.09	3.75	8.03	4.49	5.04	8.85	3.77
Secondary (I-X)	1990-91	67.5	74.3	83.3	76.9	83.4	87.7	71.3
	2007-08	56.55	68.05	76.02	57.33	68.9	77.97	56.71
	2013-14	17.93	18.96	27.42	17.79	18.32	26.96	17.86

Source: Selected Educational Statistics (2010), GOI, EDUCATIONAL STATISTICS AT A GLANCE: National University of Educational Planning & Administration, New Delhi, Dec-2016

Selection of Optimal Portfolio: A Conceptual Study

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Abstract:

The Entire process of portfolio selection begins with portfolio construction, which can be simply viewed as a matter of selecting securities to include in a portfolio and determining appropriate weighting to each of the securities in the portfolio. This study briefly describes how an investor selects a portfolio from a set of efficient portfolios based on his/her level of risk aversion.

Here among other useful concepts Sharp model and Markowitz's portfolio theory have been used. These two models are very much useful to select the optimal portfolio, which is also the most efficient one.

The Sharp Model is used to construct the portfolio with the securities, which have the most expected return with a desired risk. And the Markowitz Model indicates the proper goal of portfolio construction should be to generate a portfolio that provides the highest return for a given level of risk. A portfolio having such characteristics is called an efficient portfolio.

After the construction of efficient portfolio, an investor can choose his/her portfolio from the set of efficient portfolios. This selected portfolio from the set of efficient portfolios is called optimal portfolio, which has the best risk return combination.

Key words: Portfolio, securities, optimal, Investment,

Introduction:

Investment is one of the most important concept in economics. Growth and prosperity of an economy to a large extent

depends upon growth in investment. Savings are the starting point of investment. Household sector saves a portion of his income on regular basis. This fund is channelized to an investment opportunity to earn some extra money. This extra income compensates the fall in money value. However, investment in a source is not in real sense an effective investment. It can be considered as money investment. This money is pass on to business sector. They use this money to buy different factors of production for investing in business production activities. It will increase aggregate production of the economy or national income.

Since saved money is scarce, it is required to be used effectively. So household sector will select an investment option where return is optimum. However, investment environment is risky. Return and risk are positively related. So risk increases with the increase in return. Every investor has a risk bearing capacity. Basically, they are risk averter. So, they try to earn a reasonable return subject to a minimum risk.

Basic question here is the method of measuring risk and return. Markowitz for the first time has highlighted on the method of measuring risk and return. He has also established the existence of positive relation between return and risk. He has analysed different components of risk on the basis of sources of risk. In his opinion, risk can be of two types viz. Systematic and unsystematic. Systematic risk arises from different factors lying outside the business. They are common factors affecting all business sectors of the economy. Inflation, political unrest, natural calamities etc. Unsystematic risk arises from factors inside the business. Labour unrest, management inefficiency, obsolete machine, low productivity etc. are causing unsystematic risk. They can be reduced by taking suitable action.

Markowitz has stated that unsystematic risk can be reduced to almost zero. It requires investment in diversified portfolio of securities. Investment in one company's share is very risky. It gets distributed if investment is made in more than one securities. This collection of invested securities is known as portfolio. But nature of share should not be the same. Proper diversification of portfolio can yield optimum result. He has

calculated beta value of each share. Similar type of beta value should not be used in portfolio. More variation in beta value will mean better portfolio formed. Markowitz has established that well diversified portfolio can eliminate unsystematic risk to almost zero.

Markowitz concept has been analysed by other authors like Sharpe, Lintner and others to develop Capital Asset Pricing Model (CAPM). However, limitation of his model is calculation of unknowns. Number of unknowns increases in multiplicative manner with each unit addition of shares in portfolio. In order to avoid this complication Sharp has developed an alternative method of developing portfolio. It reduces calculation of unknowns to a large extent.

Literature review:

H. Markowitz (1952) has developed the method of calculating risk and return. In risky environment expected mean value indicates expected return or yield. Standard deviation is used for risk. He has suggested cofactor for deciding the best investment option. It is ratio of return per unit of risk. It is known as mean-variance (MV) theory. Further he has suggested a diversified portfolio of stocks to minimise risk subject to a best possible return. Lee, Cheng and Chang (2010) in his research work has supported the idea of diversified stock as suggested by Markowitz. It will reduce company specific unsystematic risk to almost zero. (Goetz man et al.2014) has shown that unsystematic risk can be reduced to almost zero in his research work. Based on MV model, Sharpe (1964) and Lintner (1965) have developed Capital Asset Pricing Model (CAPM). This model has added risk free bond with optimal risky equity model of Markowitz to form capital market line (CML). An investor can move along this line to improve his satisfaction level of investment. Also, the idea of Markowitz model has been extended to develop a Security market line (SML). It can be used to decide under and overpriced stock.

Esmielli, Souri and Mirolohi (2020) has shown that 1st and 2nd moment becomes ineffective if CAPM model fails normality test. They suggested use of 3rd and 4th moment for portfolio optimization in this situation. CAPM model has

been suggested by Rosi (2016) due to its simplicity provided complete information are available. Otherwise, effectiveness of this model will be reduced. Assumptions of this CAPM model are making it ineffective as stated by Yang (2021). Maiti and Balakrishna (2020) have stated the usefulness of debt-to-equity ratio in explaining stock return. Fama and French have introduced third factor along with return and risk. Afterwards Five factors model has been suggested by Jain and Singla (2021). They have included leverage and liquidity in CAPM model for enhancing its effectiveness.

Marhowitz Model (1952) of optimum portfolio is single period quadratic programming problem. So, when number of stocks included in portfolio is on the higher side, estimating covariance matrix becomes very difficult. For overcoming this limitation, Sharp, (1963) has formulated a single index model known as 'portfolio optimization'. It has reduced calculations from $[N(N-1)/2]$ to $3N+2$. Also, this model has simplified the calculation of beta value (Mondal, 2013)). Konno & Yamazaki (1991) proposed mean-absolute deviation model (MAD) as a substitute of MV model. It can yield same result as MV model with normality distribution.

Sharp Index model was formed by Dr. Aloysius Edward & Jagadish, (2020). It shows that only 5 top private banks are considered in optimum portfolio. required here for portfolio optimization. Yang, (2021) made a comparative study CAPM and Sharp ratios. He observed that two models are simple and easy to understand. But they have made too many simplifications and leads to inaccurate results.

Next considered number of shares in optimum portfolio. Mbithi, (2014) carried out a research work in Nairobi Stock Exchange. It shows number of shares varies from 18 to 22 shares in optimum portfolio. Lee, Cheng & Chang (2016) observed that CAPM model is very suitable in Malaysian stock exchange as it can reduce the unsystematic risk to almost zero. So far as research work in India is concerned, Chauhan (2014) constructed a portfolio using top 10 stocks of Nifty. He observed that Sharp optimum portfolio is simplest method of calculating optimum portfolio. Nalini, (2014) considered 15 stocks of various sectors from BSE sensx.

It was observed that risk can be reduced by diversifying portfolio. Only 4 stocks are selected for inclusion in optimum portfolio. Gopalakrishnan (2017) in his study of 13 actively traded scripts of NSE IT index. He concluded that a significant relation exists between IT Index and S&P Nifty 50 index. Tanuja & Srivastava (2017) has formed a Sharp index model from Nifty 50 stocks. The method of constructing optimum portfolio has been explained here.

Role of computational intelligence a sub system of artificial intelligence, by using as taken a prominent part today in the analysis of Risk and Return. Portfolio optimising problem can be solved by using this technology. Alireza Nazemi and Narges Tahamasbi (2024) has shown it in his research work. In April 2022, Sulaiman Olanerewaju Adebiyi have published an article based on Nigerian exchange market. They have used computational intelligence technique on historical price data set of listed firms to develop optimum risk-return portfolio. Alirezo Goli, Hasan Khademi Zare and others in 2019, has conducted a case study on hybrid artificial intelligence and robust optimisation problem of multi objective in nature. Another paper published by Rodolfo C. Cante and R.C.Brasileiro deals with market information system. Many scientific papers published in last decade to investigate use of CI method to financial market. They have focused on review of literature on this topic and discussed on main challenges and open problems in this scientific field. Akashdeep Das, Tinny Chowdhury and others have compared performances of techniques like Particle Swarm Optimisation (PSO), Genetic Algorithm (GO), Dynamic Programming (DP), Differential Evolutionary Algorithm (DEO) in optimising portfolio. They have considered Nifty 50 daily price data from March to May 2023 for this purpose. Results show that PSO is best to increase return at constant risk. Abhishek Gunjan and Siddhartha Bhattacharyya (2023), has dealt with portfolio selection problem in a volatile market. They applied different classical, statistical and intelligent approaches in portfolio optimisation problems. They have also showed how application of different machine learning and artificial intelligence can help portfolio managers to take right decision in allotment of portfolio optimisation. Ankit Dangi (2013),

has considered the role of using different weights in portfolio optimisation. He has formed a basket of optimum portfolios using different weights. Then a global optimum portfolio has been selected using computational intelligence techniques

Objective of study:

The Entire process of portfolio selection begins with portfolio construction, which can be simply viewed as a matter of selecting securities to include in a portfolio and determining appropriate weighting to each of the securities in the portfolio.

The Sharp Model is used to construct the portfolio with the securities, which have the most expected return with a desired risk. And the Markowitz Model indicates the proper goal of portfolio construction should be to generate a portfolio that provides the highest return for a given level of risk. A portfolio having such characteristics is called an efficient portfolio.

After the construction of efficient portfolio, an investor can choose his/her portfolio from the set of efficient portfolios. This selected portfolio from the set of efficient portfolios is called optimal portfolio, which has the best risk return combination.

Objective of this study is to construct portfolio using CAPM and SHARP method by using 50 shares used in Nifty 50 index of National Stock Exchange.

Data used:

Research work is based on primary and secondary data. No primary data is required here. We have done the calculations on the basis of daily price movements of 50 shares included in NIFTY50 Index for the financial year 2021-22. Closing prices are considered.

Methodology:

Since investment decisions are taken in a risky situation where more than one outcome are possible. But probability of outcomes is predictable. As per Markowitz, expected return is the yield value of a stock. Expected standard deviation is risk. Formula used for them are –

$$E(R) = P_1 R_1 + P_2 R_2 + \dots + P_n R_n = \sum_{i=1}^n P_i R_i$$

$$\text{Risk} = \sigma_X = \left[P_1 (R_1 - \bar{R}_X)^2 + P_2 (R_2 - \bar{R}_X)^2 + \dots + P_n (R_n - \bar{R}_X)^2 \right]^{\frac{1}{2}}$$

In the formula P_i indicates probability of occurrence of return R_i . As we are using closing stock price the following formulas will be used that is applicable for portfolio of two securities.

$$\text{Yield} = E(P) = \bar{R}_P = W_1 \bar{R}_1 + (1 - W_1) \bar{R}_2$$

$$\text{Risk} = \sigma_P = \left[W_1^2 \sigma_1^2 + W_2^2 \sigma_2^2 + 2W_1 W_2 \sigma_{12} \right]^{\frac{1}{2}}$$

In the formula P_i indicates probability of occurrence of return R_i . As we are using closing stock price the following formulas will be used that is applicable for portfolio of two securities.

c

Where,

$\bar{R}_i$ = expected return of stock 'i'

σ_i = risk of security 'i'

σ_{ik} = covariance of security 'i' and 'k'

w_i = weight factor of security 'i'

Instead of 2 securities when more numbers are added, then the formulas are-

$$\text{Portfolio return} = w_1 \bar{R}_1 + w_2 \bar{R}_2 + \dots + w_n \bar{R}_n = \sum_{i=1}^n w_i \bar{R}_i$$

$$\text{Risk} = \sigma_P = \sum_{i=1}^n \sum_{j=1}^n w_i w_j \sigma_{ij}$$

$$= \left[\frac{1}{n^2} \sum_{\substack{i,j=1 \\ i=j}}^n \sigma_{ij} + \frac{1}{n^2} \sum_{\substack{i,j=1 \\ i \neq j}}^n \sigma_{ij} \right]^{\frac{1}{2}}$$

Portfolio risk formula of n securities has two parts. Let us consider the effect of increasing securities on First part.

$$\frac{1}{n^2} \sum_{\substack{i,j=1 \\ i \neq j}}^n \sigma_{ij} = \frac{1}{n^2} \sum_{i=1}^n L = \frac{1}{n^2} \times n = \frac{L}{n}$$

$$\therefore \text{If } n \rightarrow \infty \text{ then } \lim_{n \rightarrow \infty} \frac{1}{n} = 0$$

In the above mathematical explanation, first part shows individual security variance. L is considered as the largest variance of a security. It is replaced for all variances of individual securities. Then first part is simplified as L/N . Here N is the number of securities. If it increases in numbers then first part will tend to become. Thus limit of first part of the portfolio risk is zero when N tends towards infinity.

Next we consider the second part of portfolio risk formula for n securities.

$$\frac{1}{n^2} \sum_{\substack{i,j=1 \\ i \neq j}}^n \sigma_{ij} = \frac{1}{n^2} \sum_{i,j=1}^n n(n-1)\sigma_j = \frac{n-1}{n} \sum_{i,j=1}^n \sigma_j = 1 - \frac{1}{n} \sum_{i,j=1}^n \sigma_j$$

$$\therefore \lim_{n \rightarrow \infty} \sum \sigma_{ij} - \lim_{n \rightarrow \infty} \frac{1}{n} \sum \sigma_{ij} = \bar{\sigma}_{ij}$$

It consists of covariance of two different securities. All such covariance of possible for two securities included in portfolio are taken. It is observed that result of this second part tends towards a constant value.

Calculation of portfolio from 50 stock of Nifty50 index requires following steps;

Methodology for beta diversification portfolio:

- Daily price returns are calculated first. It is showing percentage change in current day t in comparison with closing price of previous day. Formula is-

$$R_t = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100$$

Same formula is used to ascertain daily returns for whole year of all 50 stocks in Nifty50 index.

- On the basis of calculated daily returns, mean return, variance and beta values are calculated for shares and market index for the financial years.

- Next is the formation of portfolio. It has been constructed by using risk minimising weight X_i . the formula used for calculating weight is –

$$X_i = \frac{\sigma_2^2 - \sigma_{12}}{\sigma_1^2 + \sigma_2^2 - 2\sigma_{12}}$$

- At first all 50 shares are arranged on the basis of their beta value in descending order. Only two shares one from top and second one from bottom are included in first portfolio. Risk and yield of this portfolio has been estimated.

- Then first portfolio has been considered as a composite share. One more share is added with it to form portfolio 2. This process continued until all 50 shares are included. Thus 49th portfolio is the final portfolio of all 50 stocks and its yield and risk is overall portfolio return and risk.

Methodology for constructing Sharp Optimal portfolio:

Main limitation of the Markowitz model is calculation of unknown's increases in a multiplicative manner. Sharp's single indexed optimum portfolio model (1963) can solve this problem. It is based on following assumptions-

-Expectations of all investors are homogeneous.

-In determining risk and return of each stock, same period's data are considered.

-Existing Economic and Business conditions have major impact on movement of stock price.

-Index with which securities returns are linked has been constructed from the stocks of same market.

Here selection of stocks for inclusion in optimum portfolio is made on the basis of excess beta ratio. It is excess return over risk free return for per unit beta value. This method first identifies stocks included in optimum portfolio by using

cut off rate (c^*). Then weight factors are determined for each selected stock. Portfolio return and risk are finally calculated on the basis of such calculations.

Steps of optimum portfolio formation in sharp model are explained below-

1. Calculation of excess beta value of all stocks are computed by using the formula-

$$= \frac{R_i - R_f}{\beta_i}$$

On the basis of these calculations, shares are ranked in descending order.

2. Next step is the calculation of C_i value of each share. The formula is-

$$C_i = \frac{\sigma_m^2 \sum_{i=1}^N \frac{(R_i - R_f) \beta_i}{\sigma_e^2}}{1 + \sigma_m^2 \sum_{i=1}^N \frac{\beta_i^2}{\sigma_e^2}}$$

3. Now all C_i values will be compared. It will increase initially. Then it will be optimum. After that C_i value will decline. Optimum C value is cut off rate. All shares ranked higher than cut off C value is included in optimum portfolio.

4. After identifying stocks the weight factor of each selected stock is estimated. At first Z value is calculated by the formula-

$$Z = \frac{\beta_i}{\sigma_e^2} \left[\frac{R_i - R_f}{\beta_i} - c^* \right]$$

5. Finally sum of Z values are taken and proportion of each Z value on sum Z value are ascertained. They are taken as weight for inclusion in optimum portfolio. On the basis of these weights all selected equities are included to form the optimum portfolio.

Results:

Data of year 2020-21 are used here to show portfolio construction using CAPM method with Xi weight on the basis of beta diversification.

Portfolio	Stock 1	Stock 2	Xi value	Return	Risk	Cofactor
1	Cipla	Ind Bank	0.233162	0.446953	3.127589	0.142907
2	Portfolio 1	Axis Bank	0.629436	0.401594	2.982658	0.134643
3	Portfolio 2	ICICI Bank	0.510091	0.350578	2.816481	0.124474
4	Portfolio 3	Bajaj Fin.	0.669023	0.363668	2.691896	0.135097
5	Portfolio 4	Hindalco	0.684711	0.427112	2.533683	0.168574
6	Portfolio 5	TATA Motors	0.853227	0.462211	2.493755	0.185347
7	Portfolio 6	Bajaj Finserv	0.710113	0.429012	2.425214	0.176897
8	Portfolio 7	Housing Dev	0.555053	0.333863	2.277649	0.146582
9	Portfolio 8	SBI	0.745745	0.326455	2.226072	0.146651
10	Portfolio 9	M & Mahindra	0.755397	0.361951	2.141996	0.168978
11	Portfolio 10	JSW steel ltd.	0.760169	0.398001	2.089879	0.190442
12	Portfolio 11	HDFC Bank	0.574468	0.339742	1.967274	0.172697
13	Portfolio 12	Maruti Suzuki	0.750264	0.310501	1.901126	0.163325
14	Portfolio 13	TATA Steel	0.885394	0.330502	1.88609	0.175231
15	Portfolio 14	Kotak Mahindra	0.782331	0.2993	1.838603	0.162787

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16	Portfolio 15	Adani Port	0.744246	0.338349	1.738181	0.194657
17	Portfolio 16	Grashim Ind.	0.835466	0.360949	1.712761	0.210741
18	Portfolio 17	BPCL	0.832371	0.329345	1.666008	0.197685
19	Portfolio 18	TITAN	0.82002	0.311654	1.629883	0.191213
20	Portfolio 19	Hero Motor	0.877599	0.305458	1.610288	0.189692
21	Portfolio 20	Reliance Ind.	0.772214	0.298398	1.533994	0.194523
22	Portfolio 21	UPL Ltd	0.933102	0.301308	1.523508	0.197773
23	Portfolio 22	Shree Cement	0.881044	0.295946	1.508858	0.196139
24	Portfolio 23	Bajaj Auto	0.892395	0.291737	1.498175	0.194728
25	Portfolio 24	Eicher Motor	0.998203	0.291112	1.498136	0.194316
26	Portfolio 25	Ultra Tech	0.882384	0.295486	1.48728	0.198676
27	Portfolio 26	ONGC	0.930836	0.289764	1.478222	0.196022
28	Portfolio 27	L & T	0.858669	0.286327	1.458771	0.19628
29	Portfolio 28	IOCL	0.924349	0.270852	1.454112	0.186266
30	Portfolio 29	Coal India Ltd	0.944958	0.255698	1.451234	0.176194
31	Portfolio 30	HCL Techno.	0.842914	0.274283	1.415237	0.193807
32	Portfolio 31	Infosys	0.838216	0.286682	1.387103	0.206677
33	Portfolio 32	SBI Life	0.831691	0.26393	1.355549	0.194703
34	Portfolio 33	HDFC life	0.880387	0.2578	1.342877	0.191976
35	Portfolio 34	TCS	0.839082	0.25936	1.319529	0.196555

36	Portfolio 35	Tech Mahindra	1.101826	0.25631	1.31096	0.195513
37	Portfolio 36	Bharti Airtel	0.875476	0.238083	1.280813	0.185884
38	Portfolio 37	Wipro	0.78521	0.260124	1.260911	0.206299
39	Portfolio 38	Asian Paint	0.82716	0.250437	1.220809	0.20514
40	Portfolio 39	NTPC	0.913921	0.240426	1.208844	0.198889
41	Portfolio 40	TATA Cons.	0.903781	0.251368	1.195612	0.210242
42	Portfolio 41	Power Grid	0.877326	0.23937	1.174973	0.203724
43	Portfolio 42	Divis Lab.	0.929522	0.242761	1.167356	0.207958
44	Portfolio 43	Sun Pharma	0.930718	0.24297	1.159872	0.20948
45	Portfolio 44	Nestle	0.855599	0.215385	1.138555	0.189174
46	Portfolio 45	Hindustan Uni.	0.874543	0.195653	1.123986	0.17407
47	Portfolio 46	Britania Ind	0.866822	0.189906	1.109379	0.171182
48	Portfolio 47	ITC	0.845971	0.180398	1.070826	0.168467
49	Portfolio 48	Dr Reddys Leb	0.978156	0.180239	1.070106	0.168431

Analysis: The construction of portfolio has been started with Equities of CIPLA and Indus Ind Bank. Indus Ind Bank has highest beta value and CIPLA is with lowest beta. Risk and return of first portfolio are estimated. Then with portfolio 1 AXIS bank with next highest beta value has been combined to form portfolio 2. This process continued up to 49th portfolio when all 50 shares are included. Thus, Final return and risk of 50 shares are 0.180239 percentage and 1.070106 percent. It has cofactor of 0.168431 per unit of risk

TABLE 2: Optimum Portfolio of Sharp method

SERIAL	NAME OF EQUITIES	MEAN RETURN	WEIGHT	RISK
1	Eicher Motors Ltd.	0.383427	0.025752	1.099355
2	Power Grid Corporation of India Ltd.	0.378153	0.250165	3.429078
3	Shree Cement Ltd.	0.372918	0.203109	3.09215
4	Tata Consultancy Services Ltd.	0.323926	0.240868	3.391369
5	GAIL (India) Ltd.	0.322252	0.158221	2.749309
6	JSW Steel Ltd.	0.314916	0.121885	2.749309
	Portfolio Mean	0.347612		
	Portfolio risk		16.17687	
	Cofactor			0.021488

Analysis: In Sharp portfolio of table 2 only 6 shares are included. They have C value below cut of C value 5.900347. All shares lying below Cut off value are excluded from the optimum portfolio. This portfolio has low portfolio return 0.347612% and high risk 16.1787. and low cofactor of 0.021488 per unit of risk.

Evaluation:

1. In CAPM beta diversification portfolio risk is gradually coming down with each addition in share. It is shown in diagram 1 below-

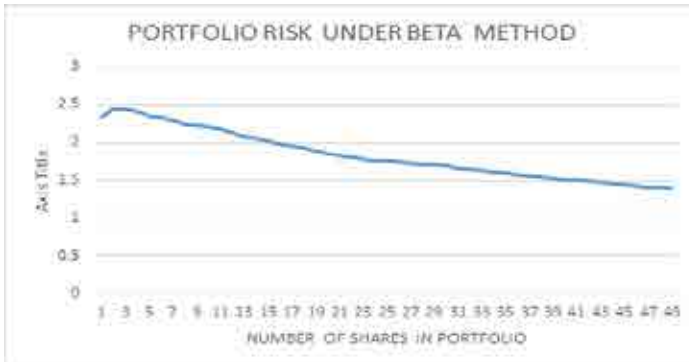


Diagram 1; Portfolio Risk

2. Also, portfolio risk is much less than portfolio risk under SHARP optimum method.

3. Further cofactor is also well above the cofactor of SHARP optimum portfolio.

4. However, number of shares included in portfolio of SHARP is much lower than CAPM optimum portfolio. It is only 6 numbers in comparison with 50 numbers in CAPM portfolio.

Conclusion:

It can be concluded that CAPM beta diversification portfolio is providing more effective return, risk and cofactor. So, investor in Indian economy can go for this method in constructing optimum portfolio provided they have capacity to invest in 50 shares. Small investors with limited investible fund can go for SHARP optimum portfolio. This analysis is based on only one-year data. Same analysis can be extended for at least 5 to 6 years to get more comprehensive conclusion.

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Reviewing The Trends and Effects of Digitization in Marketing

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Abstract

Having been an ever-evolving field, marketing has been shaped by significant trends, including the rise of digital marketing, the importance of data analytics, and a focus on personalization and customer experience. This paper has reviewed the recent trends in digital marketing, including personalization, influencer marketing, video marketing, virtual and augmented reality, voice search optimization, social media platforms, chatbots, and mobile optimization. The literature review has explored the effectiveness and impact of digital marketing on consumer behavior and the overall performance of businesses. The findings have stated that to remain competitive, businesses must stay informed about the latest trends and technological advancements, such as influencer marketing and AI, and be adaptable in their approaches. In India, the digital marketing landscape has expanded due to increasing internet and mobile penetration, higher consumer disposable incomes, and government initiatives like Digital India. Balancing conventional and digital marketing strategies has helped companies effectively reach their target audience and achieve their marketing objectives.

Keyword: Digital marketing, Trends, E-Commerce,

Introduction:

Digital marketing in India has seen tremendous growth and

is projected to continue rising. Key drivers include increasing internet and mobile device penetration, with internet users expected to reach 900 million by 2025, up from 622 million in 2020 (Lele, 2023) (PTI, Over 50% Indians are active internet users now; base to reach 900 million by 2025: report, 2024), and smartphone users to reach a billion by 2025, up from 468 million in 2017 (PTI, 2022). The e-commerce market is also expanding rapidly, projected to reach \$200 billion by 2026, up from \$38.5 billion in 2017¹, driven by increased internet access, rising disposable incomes, and the popularity of online shopping. Social media platforms like Facebook, Instagram, and Twitter are gaining users, with social media users in India projected to grow to 72.8% by 2025 from 2018 levels (Basuroy, 2023). This offers businesses significant opportunities to connect with their audiences. Government initiatives such as Digital India and Make in India further support the adoption of digital technologies. Search engine optimization (SEO) remains essential, with 89% of consumers using search engines to research products before purchasing. Social media marketing is also popular, leveraging platforms to build brand awareness and promote products. Influencer marketing is growing, with brands partnering with social media influencers. Other important channels include email marketing, mobile marketing, and video marketing. Based on digital marketing metrics, Businesses need to focus on metrics such as website traffic, engagement, conversions, and return on investment (ROI) to evaluate the effectiveness of their digital marketing strategies.

Literature Review:

India has experienced substantial growth in digital marketing, driven by expanding internet and mobile device penetration rates and rising consumer disposable incomes. According to a 2018 report by KPMG and Google, India was anticipated to have 627 million internet users by 2021, a 30% increase from 2016 (Neha Wadhwan, 2023). The increase in internet access has expanded the use of digital platforms for marketing and advertising. The Indian advertising market is predicted to grow 11.8% in 2024, reaching ₹1,22,155 crore, primarily

¹ <https://www.ibef.org/industry/ecommerce>

driven by digital media. Traditional media ad revenue is expected to grow 8.4% to ₹64,398 crore, while digital media is expected to grow faster at almost 16% to reach ₹57,757 crore (Farooqui, 2024).

A survey by eMarketer (eMarketer, 2018) revealed that Google and Facebook dominate digital ad expenditure in India, with the search and social media categories leading the market. The report also emphasized the growing significance of influencer and video marketing in India. Email marketing remains a key component of digital marketing.

According to a 2018 study by M.A. Al-Saggaf and R. Al-Saggaf (Al-Saggaf, 2018), email marketing can target specific client demographics and boost conversion rates.

Personalization is a significant aspect of digital marketing. A 2019 study by B. Li, Y. Liu, and Y. Liu (Li, 2019) found that personalization in digital marketing can boost client satisfaction, loyalty, and trust.

One of the key conclusions from the literature review is that digital marketing has become a crucial component of companies' marketing strategies. According to a 2019 study by Sánchez, Rodríguez, and Gavilán (Sánchez, 2019), digital marketing enables companies to reach a wider audience, raise brand recognition, and enhance consumer engagement and loyalty.

The e-commerce sector requires substantial initial investment in logistics, which can be recovered with effective utilization, as noted by Wadhawan and Arya in 2020. The growing e-commerce market further drives digital marketing efforts.

Trends in Digital Marketing:

Some of the most significant trends in digital marketing include the rise of artificial intelligence (AI), the importance of video content, and the expanding use of influencer marketing.

- **Artificial Intelligence:** AI has become crucial in digital marketing, enhancing customer experiences and powering more effective marketing campaigns. AI applications like chatbots, virtual assistants, personalized

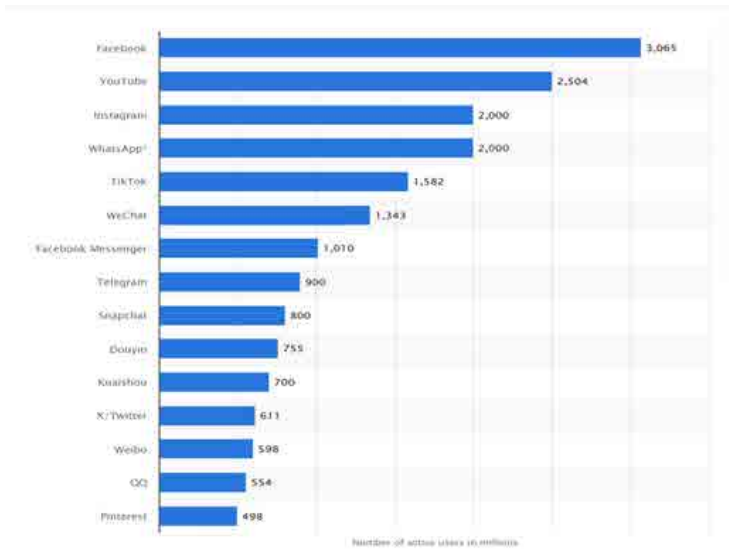
recommendations, and automated ad targeting are widely used. For example, chatbots can provide 24/7 customer support, offer prompt and accurate responses, and help businesses automate repetitive tasks.

- **Video Content:** Video content has become one of the most popular forms of digital marketing due to its engaging, easy-to-consume, and effective nature. Video platforms like Instagram, Facebook, and TikTok are essential components of any digital marketing strategy, allowing businesses to convey messages in ways that text and images cannot.

- **Influencer Marketing:** Influencer marketing leverages individuals with large social media followings to promote brands or products. This approach has become a powerful tool for businesses aiming to expand their reach and attract new customers. By tapping into an influencer's authority and personal brand, companies can market their products or services more effectively.

- **Data and Analytics:** The availability of vast amounts of data has enabled businesses to gain deeper insights into customer behavior. Emphasizing data and analytics, companies can now track customer activities across various channels and use this information to inform their marketing strategies. This results in more precisely targeted and customized marketing campaigns that appeal to their target audience.

- **Personalization and Customer Experience:** As consumers become more discerning and demanding, businesses are focusing more on personalization and customer experience. Marketing automation tools and technologies are increasingly used to create tailored campaigns and interactions based on individual customer behaviors. Additionally, businesses are prioritizing satisfying customer experiences both online and offline to enhance brand loyalty and encourage repeat business.



The statistics given by Statista illustrates the number of active users, in millions, on various social media platforms as of the latest data. Facebook leads with 3,065 million active users, making it the most popular platform. YouTube follows with 2,504 million users. Instagram and WhatsApp both have 2,000 million users, sharing the third spot. TikTok and WeChat have 1,582 million and 1,343 million users, respectively, demonstrating their significant user bases. Other notable platforms include Facebook Messenger (1,010 million), Telegram (900 million), Snapchat (800 million), and Douyin (755 million). This data highlights the vast reach and popularity of these social media networks in the digital landscape.

Impact of Digital Marketing on Consumer Behaviour:

Digital marketing has profoundly influenced consumer behaviour by enabling businesses to reach a broader audience, build brand awareness, and enhance customer engagement and loyalty. One of the key transformations brought about by digital marketing is the ability to personalize campaigns using advanced analytics and machine learning. This

allows businesses to target specific audience segments more effectively, leading to increased customer satisfaction, trust, and loyalty, as consumers feel their needs and preferences are understood. Social media platforms like Facebook, Instagram, and YouTube have become essential channels for digital marketing, allowing businesses to connect with customers, boost brand recognition, and engage in real-time interactions. Search engine optimization (SEO) is also crucial, as it can increase website traffic and revenue by improving a company's visibility in search engine results, attracting a larger audience and potential customers.

In addition to social media and SEO, email marketing remains a vital component of digital marketing, enabling businesses to target specific clienteles and improve conversion rates through tailored content. Mobile marketing, encompassing SMS, smartphone apps, and mobile websites, allows businesses to engage customers on the go and boost sales. Overall, digital marketing has significantly altered consumer behaviour, allowing firms to expand their reach, elevate brand recognition, and deepen customer engagement and loyalty. Unlike traditional marketing, which uses conventional channels like print, radio, and television with limited audience interaction, digital marketing offers two-way communication and real-time feedback. Digital marketing's precise targeting capabilities, cost-effectiveness, and ability to engage consumers more interactively distinguish it from traditional marketing approaches.

Findings and Conclusion:

Digital marketing has profoundly transformed consumer behavior and business strategies, leveraging advanced technologies to achieve greater reach, brand awareness, and customer engagement. Artificial intelligence (AI) has emerged as a cornerstone in digital marketing, enhancing customer experiences through chatbots, personalized recommendations, and automated ad targeting. Platforms like Facebook, Instagram, YouTube, and TikTok play a crucial role in disseminating digital marketing campaigns, with video content gaining popularity for its engaging and easily consumable format. Influencer marketing has also

become a powerful tool, allowing businesses to leverage the personal brands of social media personalities to expand their reach and attract new customers. Furthermore, the importance of data and analytics in marketing cannot be overstated; they provide businesses with deep insights into consumer behavior, enabling more precise targeting and customization of campaigns. Personalization is particularly impactful, as it fosters customer satisfaction, trust, and loyalty by making consumers feel understood and valued. Email and mobile marketing remain significant channels, with the former enhancing conversion rates through targeted content and the latter engaging customers on-the-go via SMS, apps, and mobile websites. Search engine optimization (SEO) is essential for increasing website traffic and revenue by improving visibility in search engine results. The rise of digital marketing contrasts with traditional marketing, which relies on conventional channels like print, radio, and television and offers limited audience interaction. Digital marketing's cost-effectiveness, interactivity, and precise targeting capabilities highlight its superiority over traditional methods. In India, the digital marketing landscape has grown substantially, driven by increased internet and mobile penetration and higher disposable incomes, with platforms like Google and Facebook dominating ad expenditure. The Indian digital advertising market's rapid growth underscores the expanding significance of digital strategies in business. Overall, digital marketing's evolution has significantly impacted consumer behavior, compelling businesses to adopt innovative approaches to connect with their audience, build brand loyalty, and drive sales.

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Stress Management: The Key To Work-Life Balance

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Abstract:

In the midst of this stressful and fast-paced life that humans are having to experience, work-life balance happens to be lost. The mind-made stress is coming from the constant work of stage and the hiding condition that creates in the everyday obligations that make it go. It will then briefly discuss how people can manage their stresses, self-care, and mindfulness, which happens to be a major push factor toward work-life balance. There are some simple stress-reduction practices, presented here in the form of ideas for our daily life, and included partly.

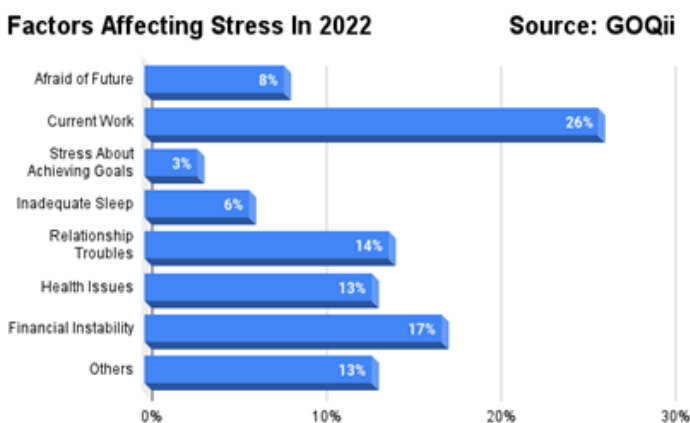
Keywords: Stress management, work-life balance, well-being, reduction of stress, coping strategies, mental health, self-care, mindfulness, techniques for relaxation, managing time, prioritizing, and boundaries.

Introduction:

Being stressed today is the companion for most people in this hustling world. It is a by-product of the pressures within our jobs, relationships, and every other responsibility that creates exhaustion and burnout. But, what is very important here is

to understand that stress is unnecessary to living life, and the longer a person idles, it could be dangerous to the person's overall physical and mental health.

Thus, the most salient when it comes to handling stress is learning how to balance work and personal life. Work-life balance just refers to achieving a balance between the demands of work and our personal lives. This enables us to maintain the overall wellness and prevents burnout. In knowing how to manage one's stress levels, one can really be able to get the best when it comes to overall productivity, relationships, and even quality of life.



Source:<https://goqii.com/blog/india-is-still-stressed-says-goqiis-annual-india-fit-report-2022-2023/>

This article will articulate why one needs to manage stress for good work-life balance. It will look extensively into various methods and techniques that would reduce stress, know how to create a healthy balance or homeostasis between the jobs and the personal work. By practicing this, people can develop more control and more overall well-being as one practices this, so that it is possible to live a richer and more well-balanced life.

Literature Review:

Recently, mindfulness has become widely known as an effective way of managing stress. Kabat-Zinn (1982) noted in a paper that subjects participating in his eight-week classes on stress reduction mindfulness decreased their anxiety and increased their overall well-being. Mindfulness is able to reduce the destructive effect of stress on someone's life through meditation and momentary awareness.

It is only effective management of time that will help minimize stress and bring about an appropriate interplay between work and personal life. According to Tuckman and Jensen in 1977, when individuals prioritize their work by establishing achievable goals, they are less stressed and more effective in time management. Planning realistic goals, delegating chores to others, and not procrastinating are formulas that could help design a much healthier and stress-free lifestyle.

Regular exercise has been said to reduce the stress level and improve the overall well-being of an individual. According to a meta-analysis by Salmon (2001), physical activity greatly improves mental health by lowering the manifestation of depression and anxiety. If this activity is added to their daily routine, individuals can reduce stress, improve their mood, and help them to not be as easily affected by stressors in life.

People with a strong support system of friends and family might be able to cope with pressure more effectively. Social support, as indicated by Cohen and Wills (1985), is one defense which keeps the body from being affected by stressors leading to health deterioration. People may not feel lonely and isolated when they are relating to others and soliciting assistance from other people they love.

According to Greenberg et al. (2015), employees who went through the stress management program experienced lower levels of stress and higher job satisfaction compared with those who were not exposed to any intervention. This underscores further the importance of proactive workplace-based stress management programs.

In fact, Richardson and Rothstein, in their review, underscore the need to take an integrative approach to stress management through practices such as mindfulness meditation, exercise, and maintenance of social contacts. These practices can improve a person's quality of life and render the individual more resistant to pressures.

Active employees, according to Lee and Young's study in 2019, who exercised frequently reported feeling less stressed and experienced better work-life balance in comparison to the non-exercising and sedentary employees. This explains how importance, in exercising, can help reduce stress and enhance a healthy work-life balance.

Research gap:

While the administration of stress is widely known to be an integral part of work life balance, very little research has been accomplished in the field, which seeks to find out what works about specific techniques and interventions for dealing with stress. While many theoretical concepts for the treatment of strain have been put forward, more stringent studies are required to test stress intervention strategies in practical settings and on diverse samples. Research evidence is also absent in the field of stress management interventions that have looked at such variables as work performance, job satisfactions, and quality of life-as outcome over time.

Research Objectives:

1. To identify what stress relief techniques work for working people in very stressful roles, like work.
2. To determine whether stress relief has any impact on productivity, job satisfaction, and general well-being.

Research Methodology and Sample Size:

A study on stress management techniques and work-life balance was conducted on 346 employees working in India. The sample size comprised 182 male and 164 female respondents. The sample of 346 was taken considering that the data and analysis provided will constitute a representative view of the employees at large and will help gather comprehensive data

on the nature of stress management practices. Participants were chosen across numerous industries and professions so that their diverse perceptions on stress management at work are brought into discussion.

Accepted Stress Management Techniques by the Employees:

The surveyed Indian employees have indicated that they have adopted stress management techniques to deal with the pressures that come from both their professional and personal lives. Both male and female employees have accepted and practiced them to reduce the stress levels and find a better balance between work and home. Some of the effective techniques of stress management that have been identified for surveyed employees are as follows:

1. **Mindfulness and Meditate:** Mindfulness practices, or meditation and deep breathing exercise, were promoted among both men and women employees. These practices help an individual concentrate on the given moment, increase their knowledge of living free from anxiety, and enhance overall well-being.
2. **Physical activity and Exercise:** The employees were guided towards a regular exercise and physical activity as a stress management technique as it indeed helped reduce the crux of stress. Doing yoga, running, or dancing relaxes the mind, improves the body with good health, and charges their energy level.
3. **It also includes time management:** the techniques of which include prioritization, realistic goals, and an organized daily schedule. Time management helps people achieve peak productivity, reduces work-related stress, and allows them to balance work life with other lives
4. **ocial Support:** Solid support systems both at work and at home have been identified as an important ability with which to cope with stress. Using support from coworkers, friends, or family for emotional support can help work through adversity and stress.
5. **Relaxation Techniques:** Relaxation techniques such as deep breathing, progressive muscle relaxation, or listening to

soothing music proved efficacious in releasing stress levels and improving employee levels of relaxation.

Findings:

It was found that most of the employees use various forms of stress management techniques to cope with the workplace stress. However, the male and female employees who are facing various stressors in their workplaces differ in the attitudes toward coping with stress. Let's look into some of the widely accepted types of stress management techniques by male and female employees of India along with their percentages:

1. Exercise and Physical Activity:

- Male Staff: 40% of male staff prefer to reduce stress through exercises like jogging, cycling, or gym workouts.
- Female Staff: About 35% of the female staff also include exercises in their daily life to reduce stress by doing yoga or dancing.

2. Mindfulness and Meditation:

- Male Employees: A total of 20% male employees adopt mindfulness and meditation as a practice to combat stress and achieve conscious focus.

Female Employees: A little higher, at 25%, the usage of mindfulness for women employees in beating work-related stress.

3. Social Support:

There are following percentages among employees.

Male Employees: Nearly 30% male employees seek this social support from friends or colleagues to relieve their stress and acquire emotional support.

Female Employees: More percentage of female employees is reported here, that is about 35% who gain social comfort and thereby reduce stress through this social support system.

4. Work-life balance

- Male Workers. A higher percentage, about 25% of male workers always emphasize the importance of work-life balance through making boundaries and disengaging themselves from work activities during non-working hours.
- Female Workers. A greater percentage of about 30% of female workers highly take a strategic step on work-life balance to avoid severe burnout and deterioration of well-being.

5. Professional Counseling:

- Male Employees: Only 15% of the working male population would be seen by professionals for workplace stress management counseling or therapy.
- Female Employees: Some 20% of the working female population would have availed of professional help if they have been subjected to chronic stress or mental health disorders.

Clearly, the Indian men and women make excellent use of several modes of managing stress in their day-to-day functioning at workplaces. By knowing and understanding these differences, the organization can approach stress management programs with a difference aimed specially to meet the differing needs of its workforce.

Recommendations:

Step 1: Identify Stressors Identify the particular things that cause your stress. Sometimes, these can be work-related pressure, family fights, financial struggles, health issues, or simply a cocktail of all of the above. The more particular you are in defining what causes your stress, the better equipped you will be to develop particular strategies to combat those stressors.

2. Mindfulness: Being mindful is about being in the present moment, noticing your thoughts, feelings, and body sensations without judgment. Practices like deep breathing, meditation, or yoga will help bring forth the serenity and centeredness required for this daily chaos.

3. Draw your boundaries: Balancing work and personal life will necessitate clear-cut boundaries. Learn to say no to that extras that do not fit within your capacity; instead, focus on whatever fulfills you.

4. Exercise Regularly: Physical activity is a great stress releaser and may reduce tension, improve mood and general welfare. Start by exercising at least 30 minutes most days of the week in some way - whether it's walking, jogging, swimming or yoga.

5. Sleep Soundly: A sleep-deprived person has increased stress levels and his cognitive ability and moods are thrown out of gear. In order to have quality sleep of 7-9 hours daily, the person should have a bedtime routine followed with a conducive sleeping environment.

6. Adopt Healthy Eating Habits: A healthy diet is essential in reducing stress as it supplies your body with required nutrients and energy. Make sure to consume a balanced diet that consists of plenty of fruits, vegetables, whole grains, lean proteins, and healthy fats to support your general health.

7. Social Support Seek: Relationships with friends, family, or support group may offer emotional support, practical help, and belonging through difficult times. Don't hesitate to ask your family members for a listening ear or an assistive hand when you need those.

8. Self-Care: Reading, listening to music, taking a bath, spending time out in nature, or doing hobbies keep your batteries recharged, lower the level of stress, and also assists in rejuvenating your body, mind, and soul. So take time out regularly for things that nourish your mind, body, and soul.

Limitations:

Despite the valuable insight acquired from the study, there are certain limitations that have to be addressed: the present study was conducted at a specific geographical location, that is, India, and so perhaps it cannot be generalized to other countries or regions. In addition, although there are 346 samples, for the purpose of the study, it might not be representative of the diversified stress management practices

across different industries and professions. Apart from the aforementioned sources of bias, data in this study were self-reported and may have been confounded with response bias as there is the potential of underreporting or over reporting of stress levels and coping with participants.

Conclusion:

Work-life balance is the most important aspect for healthy and productive living. Stress management proves to be an essential process that helps individuals cope with and reduce stress from the work and personal life. Effective methods of stress management, including mindfulness practices and time management strategies, physical activity, and seeking support from others, help individuals to create more balanced and fulfilling lifestyles. To stop stress from running down our health, we need to take good care of ourselves and work hard to make time for all those activities that help us calm down.

Further Scope of Study:

From this study, a way forward to further research and interventions to enhance workplace well-being would be readily apparent. The following could be the areas of study to foster deep understanding into the stress management and work-life balance of the employee:

1. Longitudinal Studies: Longitudinal studies would facilitate checking on the efficacy of the stress management techniques and work-life balance practices over more extended periods. In this regard, insights into sustainability aspects of those interventions would be obtained.

2. Comparative Analysis: Stress levels and work-life balance practices are compared to identify the challenges and opportunities for improvement among different demographics, industries, and structures of organizations.

3. Intervention Programs: Based on the needs of each organization and work environment, stress management programs and work-life balance initiatives are designed and implemented in order to create an environment where employees work in a happy and healthy context.

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Leveraging Integrated Marketing Communication (IMC) for Brand Recognition and Sales: A Qualitative Study of Small Catering Firms in Kolkata, India

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Abstract

This study delves into how small catering companies in Kolkata, India, are using Integrated Marketing Communication (IMC) to create brand awareness and boost sales in a competitive marketplace. With the hospitality and food services industry in India developing with heightened consumer expectations, digitalization, and occasion-based consumption trends, small catering companies are at a turning point. In contrast with big hospitality chains, these smaller businesses do not have the human and financial capital to invest in widespread advertising campaigns. But most are employing a combination of old-school and new-school communication tools—terms used collectively as part of the IMC model—to establish a niche market and get noticed. From a qualitative perspective, the current research explores the practices of 15 small catering companies in Kolkata based on semi-structured interviews and participant observations. The participants were owners, operational managers, and freelance digital marketers representing these firms. The results show that although most companies don't use the term "IMC" officially, their practices concur with its basic principles: uniform messaging, cross-platform advertising, building relationship, and feedback-based communication.

A common thread throughout interviews was the significant story-telling and customer interaction role played by digital media, specifically Instagram and WhatsApp. The caterers

indicated that short video clips, customer feedback, and behind-scenes reels enhanced client confidence and inquiry levels. Festival-themed promotion, customized menu boards, and fan engagement-driven promotions – e.g., polls, contests, and influencer shout-outs from local influencers – increased online activity and brand recognition. Offline channels such as banner positions around event venues, flyer drops in local areas, and partnership with event organizers also played important parts. The study, however, also revealed some of the challenges that include inconsistent brand messages, limited measurement, and difficulty in sustaining long-term engagement. Most companies were running without systematic branding codes or feedback loops based on word-of-mouth instead of long-term customer relationships. The limitations notwithstanding, the flexibility and innovative use of IMC elements suggest a promising way forward. The research adds to the literature on small business marketing in the emerging markets through a focus on a culturally vibrant and dynamic city center. It necessitates IMC training programs specifically designed for micro-entrepreneurs and highlights the need for affordable digital tools and mentorship networks. As competition increases and consumer demands change, there will be a need for sophisticated and holistic communication for small catering businesses to survive and thrive.

Keywords: Integrated Marketing Communication, Small Catering Firms, Brand Recognition, Sales, Kolkata, Hospitality Marketing, Qualitative Study

Introduction

In a more globalized and media-dominated world, Integrated Marketing Communication (IMC) has become an indispensable strategy for brand success, especially for companies in the ever-changing hospitality sector. IMC is the strategic alignment of different tools of promotion – advertising, public relations, online marketing, direct communication, and sales promotion – to achieve clarity, consistency, and maximum communication effectiveness. For small catering businesses in Kolkata, India, this tactic is not only a discretionary luxury but a critical requirement

to traverse competition and influence target markets successfully.

Kolkata, with its deep cultural history and vibrant food culture, offers a special context where heritage tastes blend with modern marketing requirements. With increasing numbers of weddings, festivals, and corporate events, the demand for customized and quality catering services has grown. Yet, as opposed to big hospitality companies with well-organized marketing functions and fat wallets, startups in catering tend to work with small budgets, ad hoc marketing expertise, and extensive use of word of mouth. Through all these limitations, most of them are experiencing the creative force of IMC properly set to their size and target customers.

The information revolution has particularly reconfigured small businesses to interact with potential clients. These platforms are being used creatively for promotional work, gathering feedback from customers, and demonstrating services. Simultaneously, more conventional techniques like distributing leaflets, erecting banners at or around the event venues, and engaging with local event organizers are still contributing significantly to offline visibility. These multi-mode approaches capture the spirit of IMC, with the technique of consistency and coherence of communications across all the communication channels serving to strengthen brand positioning.

What is so interesting about this environment for concentrated academic research is the struggle between resource limitation and innovative communication techniques. Kolkata catering companies usually have very particular local clients who appreciate taste and customized service. As such, a good brand image—crafted by integrated communication—is crucial not only to bring in clients but also to foster long-term relationships. IMC enables such companies to tell their own distinct stories, differentiate their product, and project an integrated image to the general public.

In addition, the pandemic placed an added sense of urgency on these practices. Health-aware customers now demand open hygiene practices, touchless service, and open

communication regarding food sourcing and preparation—all of which come under the umbrella of IMC. The companies that adopted multi-channel engagement and trust messages were more inclined to shift to the crisis and bounce back after the lockdown.

This study looks at how small catering companies in Kolkata utilize IMC to accomplish two primary aims: increasing brand awareness and sales. It looks at the exact tools that they utilize, the ways in which they modify the tools to meet local taste, and the effects of these actions on customer attitude and business performance. By thorough qualitative examination, involving owner and marketer interviews, this research identifies that even if these companies are not deliberate in applying textbook IMC structures, intuitive application of integrated communication by them is frequently intentional and useful.

Finally, this paper adds to the general knowledge of how small and micro businesses in emerging markets can leverage contemporary marketing concepts to break structural barriers. It offers practical recommendations for practitioners and policymakers who want to empower local firms through training, digital access, and marketing ingenuity. By shining the light on small catering companies in one of India's major culinary hubs, this study highlights the power of IMC as a game-changer for grassroots entrepreneurship.

Method of Study

In order to investigate how small catering companies in Kolkata use Integrated Marketing Communication (IMC) to achieve brand visibility and sales enhancement, the study employed a qualitative approach. Since the research question had an interpretive and exploratory nature, qualitative research was best for uncovering the intricate marketing practices, strategies, and attitudes of small business owners and marketing staff within the catering industry. As per Denzin and Lincoln, qualitative research is most suited when the aim is to gain knowledge of social phenomena from the participants' standpoint in their natural environment (Denzin and Lincoln 14). This type of research allowed the researcher

to explore how micro-sized entrepreneurs internalize, learn from, and apply communication techniques under the IMC system, even if they do not term them as such.

The research used semi-structured interviews as the main mode of data collection, supplemented by observational data and documentation analysis. Fifteen small catering companies located in different areas of Kolkata—North Kolkata, South Kolkata, and suburban regions like Barasat and Howrah—were purposively chosen. These companies were chosen using factors such as number of employees (fewer than 25), years of operation (at least two years), and frequent participation in event-based catering services like weddings, festivals, and corporate events. Purposive sampling was used since it enables the researcher to highlight specific attributes of a population that are of interest, thus making it easier to carry out deeper analysis (Palinkas et al. 533).

Participants comprised operational managers, owners of firms, and independent marketers who worked with these companies. Interviews were carried out for two months, both online (using Google Meet and Zoom) and face-to-face, depending on the participant's time availability. Interviews lasted for 45-60 minutes and followed a semi-structured interview guideline to permit room for probing emerging themes. The questions focused on promotional strategies, customer interaction methods, branding activities, digital tool usage, traditional marketing activities, and perceived challenges and results.

Field observation was also utilized as an adjunct method. The researcher watched four catering events where the selected companies were offering services, noting branding aspects such as signs, staff uniforms, menu boards, and customer interaction. These findings assisted in triangulating the verbal data and provided contextual basis to participants' assertions regarding visibility and client perception. Furthermore, digital artifacts like Instagram pages, WhatsApp business profiles, promotional posters, and client reviews were examined to identify the messaging consistency and cross-platform communication—a fundamental pillar of IMC, according to Belch and Belch (45).

Data analysis proceeded with thematic coding, employing Braun and Clarke's six-stage framework of familiarization, coding, development of themes, review, definition, and write-up (Braun and Clarke 87). Interview transcripts were coded by hand with an inductive methodology, permitting themes to arise naturally from the data as opposed to being pre-conceived. Common patterns like "digital storytelling," "customer retention strategies," "offline prominence," and "resource limitations" were observed. Each of these themes was then examined relative to the IMC model—primarily in terms of message consistency, audience targeting, media channel integration, and feedback mechanisms suggested by Kitchen and Burgmann (7).

Ethical principles were scrupulously respected during the research. Informed consent was communicated to participants about the research's purpose, and their verbal or written permission was received prior to interviews. Identities were anonymized across all reporting to maintain confidentiality. This was especially crucial given that many respondents revealed informal marketing tactics and operational loopholes that could impact their business reputation.

Although the research provides rich insights into the IMC practices of small catering businesses, it is not without its shortcomings. To start with, the sample size, though rich in contextual richness, constrains the extensibility of the research findings. Additionally, the use of self-reports can be subject to biases because the respondents may have overstated successes or understated setbacks. Nonetheless, the incorporation of observational and documentary evidence served to overcome this limitation to some degree. Subsequent research could gain from a mixed-method approach using surveys and experimental marketing interventions to quantify the concrete results of IMC strategies.

Overall, this methodology was framed to support the study's purpose: to grasp how small catering companies in Kolkata think and implement integrated communication tactics to increase visibility and sales. Through the integration of interviews, field observations, and digital content analysis, the study developed a comprehensive overview of IMC practices

within a localized, resource-strained, but highly competitive business climate. The qualitative method afforded the required depth and maneuverability to examine changing marketing practices in an industry that is both traditional in origin and progressively responsive to digital revolution.

The research found eight general themes that capture how small catering businesses in Kolkata use Integrated Marketing Communication (IMC) strategically to establish brand identity and enhance customer interaction.

Digital Storytelling as a Main Branding Tool

One of the strongest findings is the use of digital storytelling – particularly through Instagram and Facebook – as a way to engage target audiences. Most companies produce behind-the-scenes videos of food preparation, customer reviews, and event installations on a regular basis. These videos usually showcase the company's values, such as cleanliness, customization, or heritage. For example, a company that organized Bengali weddings posted videos of their chefs preparing traditional dishes using locally available ingredients. This method also supports Kitchen and Burgmann's (2015) idea that successful IMC combines informational and emotional appeals to build trust and awareness. Visual and narrative uniformity across social media platforms strengthens brand identity and encourages customer loyalty.

WhatsApp and Personalized Engagement

WhatsApp is another essential means of customer interaction, commonly applied for the sharing of menus, booking confirmations, and gathering feedback. Companies use broadcast lists to share festival deals or seasonal menus, making the customer feel exclusive. The subjects highlighted that one-on-one communication via WhatsApp is more reassuring to customers. This corroborates the work of Mangold and Faulds (2009), who propose that social media is not only a tool for broadcasting but also a tool for interacting with customers in a two-way conversation. Catering companies therefore gain from this informal yet direct channel, which is appropriate in the relationship-based hospitality sector.

Local Influencer Collaborations

One of the emerging trends for small caterers is also the partnership with local micro-influencers, such as food bloggers, event planners, and noted Instagram influencers. Companies invite these influencers to sample and comment on their products, usually in return for free services or cross-promotions. Such collaborations allow companies to tap into niche markets and establish credibility. Since endorsements by recognizable people are powerful persuasive tools, according to Belch and Belch (2018), especially in close-knit societies. In Kolkata, where word-of-mouth remains king, influencer approval tends to convert directly into reservations.

Traditional and Digital Tools Integration

Even though digital is emphasized, most companies still spend on conventional means of advertising like banners, brochures, and pamphlet distribution. These are strategically located along community halls, schools, and apartment complexes. Festivals such as Durga Puja, wedding expos, or local food festivals also have the catering companies participating with their offerings. The synchronization of these offline initiatives with online presence depicts an organic yet strategic incorporation of the principles of IMC. As Schultz, Patti, and Kitchen (2013) point out, the beauty of IMC is the consistency of the message across mediums. Companies that integrate their offline and online branding tend to show higher consumer recall and greater inquiry conversion rates.

Seasonal and Festival-Based Campaigns

Seasonality became a primary motivator for IMC strategies. Companies tend to develop communication campaigns that revolve around festivals like Durga Puja, Eid, Christmas, and the wedding season. The campaigns are characterized by special menus, offers, and engaging content such as recipe polls and user-generated content contests. One company talked about kicking off a “Shaadi Season” campaign that involved a series of short videos on Instagram through client success stories, décor with a theme, and chef interviews. These cross-platform campaigns create buzz and fortify emotional connections with the brand. The importance of seasonal

marketing within IMC is amply justified by Batra and Keller (2016), who highlight context-based messaging in building consumer responsiveness.

Brand Positioning through Visual Identity

Visual consistency – through menus, social media, uniforms, and packaging – was a repeated strength among the most successful companies. Logos, color schemes, and typography stayed consistent, giving off a professional and distinguishable impression. This visual coherence plays an important part in brand recognition and is consistent with the IMC model's focus on visual branding cues (Percy, 2014). One company mentioned that customers recalled them based on their "turmeric-yellow chef coats," which became a point of discussion in reviews and word-of-mouth referrals. These sensory and symbolic aspects make the firm more memorable in a competitive marketplace.

Customer-Focused Messages and Feedback Loops

Feedback-focused communication was another primary IMC practice witnessed. Companies proactively solicit testimonials after the event and share them on online platforms. They also conduct intermittent feedback surveys through Google Forms or WhatsApp. Interviewees confessed to applying customer feedback in adjusting menus, presentation formats, and reconfiguring packages of service. This loop of customer focus validates IMC's two-way communication approach. According to Duncan and Moriarty (1998), successful IMC is dependent on relationship building and conversation more than on one-way persuasion. Catering businesses employing this loop exhibit greater versatility and creativity in their services.

Constraints in Measurement and Strategy

In spite of these encouraging practices, most companies struggle with campaign measurement. Few tracked website traffic, click-through rates, or Instagram metrics. Many depended on oral comment and questioning to determine success. Furthermore, several companies had no formal marketing plan or branding guide, resulting in occasional

tone and message inconsistency. These results ring true with concerns expressed by Eagle and Kitchen (2000), which observe that small firms tend to apply IMC in disjointed manners, without the systematic implementation observed in larger organizations. This shortfall highlights the necessity of IMC education that is specific for micro and small companies.

Overall, the research establishes that small catering companies in Kolkata are using a hybrid combination of old and new tools to push their brand and boost sales. Their approaches, although intuitive and casual, are broadly in line with essential IMC principles of consistency, interaction, customization, and relationship marketing. Increased use of sites like Instagram and WhatsApp, combined with local influencer collaborations and festival-themed promotions, reveals an agile and culturally attuned model of marketing.

Despite resource limitations and low marketing literacy, the companies' innovative adaptability and in-depth knowledge of local tastes have enabled them to ride the market successfully. These findings indicate that with small investment in training and digital resources, small catering companies can further optimize their IMC approach to achieve continued growth. Future studies can broaden this research to other Indian cities to analyze regional differences or run longitudinal studies to quantify the long-term efficacy of such IMC practices.

Conclusion

Integrated Marketing Communication (IMC) is no longer an optional strategy reserved for large-scale corporations. As this study has demonstrated, even small catering firms in Kolkata—despite operating within constrained budgets and informal marketing structures—are actively and intuitively practicing core IMC principles to strengthen brand recognition and increase sales. These companies have adopted IMC by necessity, combining old communication tactics with new digital media to reach a wider, more vibrant set of customers. The hybridization has been not only successful but also indispensable to survival and expansion in Kolkata's competitive, culturally rich catering industry.

One of the key findings of this study is that while such companies do not necessarily speak marketing language or codify their approach, they are thoroughly attuned to the importance of clear and multi-channel communication. The interviews and observations of the study demonstrated a pattern of adaptive behavior where companies employed WhatsApp to keep in touch personally with customers, Instagram to present the aesthetics of food and customer reviews, and offline strategies such as event-based banners and word-of-mouth recommendations to maintain visibility in public spaces. This is an expression of a well-established awareness of their target market and capacity to tailor communication patterns in terms that appeal locally.

Furthermore, the results confirm that the strength of IMC is its capacity for establishing customer relations through repetition and consistency at various touchpoints. Most of the questioned companies acknowledged the role of storytelling in building credibility and emotional bonds with prospective customers. Either via short videos emphasizing the hygiene of food preparation, past event testimonials, or face-to-face interaction through messaging services, such efforts cumulatively improved credibility. Their strength, however, is not technical acumen but authenticity and frequency – characteristics that build brand recognition and consumer trust.

This research also reveals that the implementation of integrated marketing strategies is integrally connected to Kolkata's socio-cultural environment. The frequency of festivals, weddings, and community celebrations in Kolkata creates natural points for catering establishments to sync their messaging with cultural themes. For example, companies that rolled out thematic campaigns during Durga Puja or Christmas saw booms in customer inquiries, highlighting how cultural synchronization increases message salience. It is such cultural tuning of IMC that sets apart successful catering companies from others.

Yet, there were key challenges revealed through the study. Firstly, most of the businesses did not have formalized marketing strategies or metrics to measure the success of

campaigns. Their dependence on “gut feeling” or word-of-mouth customer feedback indicates a lack of analytical prowess, which constrains long-term strategic planning. Second, although most businesses are active online, they fail to use analytics provided by platforms such as Instagram or Google My Business. This failure diminishes the possibility of monitoring engagement patterns or adjusting content differently. In addition, there was also a shortage of consistent branding – i.e., identical logos, color themes, or brand voice – to the point where there was fragmented brand perception.

These limitations are not overwhelming. They rather indicate areas where capacity-building efforts could be impactful. Offering affordable marketing training sessions, providing rudimentary education in online metrics, and creating easy-to-edit branding templates might assist micro-entrepreneurs in applying more form to their communication strategies. NGOs, government offices, and business incubators can contribute here, notably by acknowledging small catering businesses as local economic development and cultural representation drivers.

Another significant learning is the interpersonal and emotional dimension of marketing in small businesses, which is neglected in formal IMC writings. In Kolkata, the caterer-client relationship is very personal and in many cases, long-term. Repeat customers may anticipate not just a repeat food experience but also the same kind of interactions with the business owner or staff. It is hence important to maintain consistency in tone, responsiveness, and attentiveness across channels – whether a face-to-face meeting, a WhatsApp message, or a phone call. This introduces a human touch to IMC that is especially relevant for small-scale service industries.

Academically, the study helps to add to the increasing understanding that frameworks of IMC have to be flexible and context-dependent, particularly when used in micro and small businesses in developing economies. The majority of the worldwide literature on IMC has targeted large firms in Western economies. But what this research exposes is that if IMC is read as a series of fluid principles instead of

static models, then it is imbued with powerful set-theoretical potential in a wide range of contexts. In the Kolkata catering industry case, improvisation and cultural competence frequently take the place of official strategy, but produce similar effects. This requires both more expansive and inclusive conceptualizations of IMC among practitioners as well as scholars.

It is also worth keeping in mind what these findings have to say about the future. With digital technology increasingly affordable and consumer demands ongoing their evolution, small businesses need to be able to transcend simple promotion and advance toward more strategic, data-driven communication practices. The pandemic has already sped a transition toward health-focused branding and open business practices. The future wave of transformation can include AI-powered personalization, e-commerce integrations, and chatbot-powered customer care. Restaurants that start incorporating these aspects into their IMC strategy now will become stronger and more competitive in the future.

Finally, the investigation of small catering companies in Kolkata demonstrates that the heart of IMC—consistent, clear, customer-oriented communication across channels—is universally applicable, irrespective of business size or market location. By modifying their communication tools to suit cultural environments and operating conditions, these companies illustrate the kind of creativity and strategic acumen worthy of notice and encouragement. They are not only feeding communities; they are constructing brands, narratives, and local economies. As we reconsider the future of entrepreneurship and hospitality in India, Integrated Marketing Communication is both a useful toolkit and a revolutionizing influence on the achievement of small businesses.

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