JIM QUEST

Journal of Management and Technology

UGC Care List | **INDEX COPERNICUS** INTERNATIONAL | **EBSCO**host

A Bi-annual Refereed Research Journal of Jaipuria Institute of Management, Indirapuram, Ghaziabad

●

From the Desk of the Chief Editor

It gives me immense pleasure to reveal the latest issue of the JIM QUEST- a bi-annual refereed research journal welcoming high-quality original contributions on different functional areas of management. The Journal offers panorama to scholars to contribute on topics of interest to the scientific community. The ultimate goal of this journal is to produce a high-quality publication that will serve as a cutting-edge resource for researchers in the field and provide recognition for the journal's editorial staff and contributing authors. It provides a perfect opportunity to immerse oneself in the advancements of the fast-growing field of study and get published in a journal that has excellent reach and expectations of a significant impact. This present issue promotes applied research in emergent themes that improve the practice of all management areas including Economics, Finance & Accounting, Marketing, IT, International Business, and Business Analytics amongst other core business aspects. Moreover, this issue addresses the challenges in various industries, describing the application of latest techniques and methodologies. Therefore, this issue has come up as a blend of theoretical, empirical and experimental papers that significantly contribute to the disciplines of management and interdisciplinary areas. I take this opportunity to acknowledge the contribution of authors whose impactful research added significant value to current issue of JIM QUEST. I hope that readers will find the content of JIM QUEST informative and valuable in their professional lives

Prof. (Dr) Daviender Narang
Chief Editor

Contents

A Review of Government Policy for the Indian Handicrafts Development

Akanksha Choudhary *
Dr. Poonam Mishra **

Abstract

This article describes the status of the domestic handicraft market in India. As the industry is flourishing to its best in the export market, the Indian domestic market is equally befallen apart. Thus, the current policy framework and governmental support are no longer providing an intensive for these arts to survive for long. The artisanal community is now switching to minimal jobs for survival, indicating the huge need for change in policy frameworks and strategic management. This is an important economic asset for a country like India, having conventional artforms that can employ more than half of the population, the labour-intensive industry, which can also eradicate poverty to some extent if managed properly. The requirement is to provide an innovative direction to this industry so that it can work equally for the environment, society, and economy. This paper deals with the current scenario and policy framework with regards to the Indian domestic handicrafts market and future aspects for the betterment of the domestic market, supporting the handicrafts artisans and cultural crafts of India.

Keywords: sustainable development, handicrafts, government policy, SDGs, etc.

1. Introduction

Handicrafts represent an important segment of the Indian economy. Being a developing country, it is a highly de-centralized/unorganized sector (Ghouse, 2017). India focuses more on industrialization, modern technology, and modern developmental industries rather than focusing on the management of the handicrafts industry (J. Mishra, 2013). These small-scale units are mostly rural based, working with limited resources, in backward and inaccessible backgrounds. Originally handicrafts have been part-time activities for agricultural families but due to lack of investment, and land holdings, people switched to art and crafts based on natural raw materials such as clay, leaves, bark, etc. which are now very much vital for being an environment-friendly alternative. The varied Indian handicrafts including quilts, carpets, pottery, garments, and jewelry are being loved in the world. However, there is a huge gap between the domestic demand for handicrafts and the exports of handicrafts all over the world. Likewise, the world is influenced by classic handmade objects and artifacts, and Indians are influenced by western thoughts and fashion sense. This, difference in thinking and perception plays a vital role in assessing the local/domestic demand for handicrafts in Indian markets (Datta & Bhattacharyya, 2016). For instance, furniture shopping in most of the metropolitan cities of India is likely to be flooded with supermarkets or Ikea outlets rather than choosing some handmade small shops available in the city or semi-urban markets.

Handicrafts have been brutely neglected throughout the market spaces and yet to answer the unemployment ratio is increasing due to people switching their year-old businesses as a result of lack of demand and business stability (Upadhyay & Jain, 2019). The problems of the handicrafts sector are going to increase with the years passing by as after the pandemic, the market has lost potential customers of handicrafts. The ratio of tourist buyers for handicrafts has been accounted to be more compared to the locals, and residents of a tourist destination (Majeed, 2018). Thus, several artisans must switch their ancestral businesses to do minimal jobs for a comparatively stable livelihood.

Handicrafts hold huge potential for a sustainable future (Kapur & Mittar, 2014). Currently, the handicraft sector contributes to economic growth and international financial earnings, however, the sector faces a lot of challenges on a domestic level. moreover, the lacking education, capital investment, and poor technological know-how add up to create losses on the account of producers (Chaudhauri et al., 2018; Murray et al., 2011; Shaikh, 2020).

* Research Scholar, Department of Economics, Manipal University Jaipur, Rajasthan
   akanksha14061996@gmail.com
* * Assistant Professor, Department of Economics, Manipal University Jaipur, Rajasthan
   poonam.mishra@jaipur.manipal.edu

With passing time the quality of handicrafts available in the domestic market is not matching to that of exported goods, this denotes the demand for handicrafts is not much in the domestic market (Sharan et al., 2020). The handicraft sector is recognized as an important pillar of sustainable economic development by offering employment opportunities, social equality, economic growth, and environmental sustainability (United Nations industrial development organization 2005, United Nations conference on trade and development 2008). (Bhat & Yadav, 2016) On the other hand, it has been witnessed that over the last 2 decades several traditional handicrafts worldwide have either disappeared or are in the shape of extinction, much research has identified the challenges and recommended that necessary measures be taken by government and stakeholders on the behalf of the industry. Even after inducing supply-side incentives at the inception of the managerial framework, supply chain dynamics are required to be planned out in theory as well as in practice (Sharma Hitesh et al., 2017).

India as an ancient civilization hauls many communities of handicraft artisans diversely impacted by different religious and cultural sentiments. Thus, exquisite artifacts from India are loved all over the world (Throsby, 2014). However, the main problem of declining handicraft demand in the domestic market is increasing western influence. Taking from fashion to interior decoration, modern architecture is brushing away the existence of handmade from India (Barrère, 2016). The cultural influence among youth is advancing the bright side of modernization by forgetting the historic significance of heritage and cultural identity. Philosophy defines cultural crafts as the denotation of human existence, the variety of self-sustaining art forms which are dear to nature, and a healthy lifestyle. To address the declining trend of historic crafts governing bodies plan various policies and market strategies to keep the volume of cultural identity intact (Vyshak et al., 2018). Therefore, this paper intends to acknowledge these problems by assessing the existing handicraft policies in India. The research provides information based on the sustainable development of handicrafts by reviewing the qualitative secondary data available on government sites, reports from the ministry of textiles, the department of handicrafts and handloom, etc. To establish a relationship between handicrafts and sustainable development this study observed the possibility of a new strategic framework that can be adapted to synchronize these issues and their solutions.

2. Literature Review

The literature review reveals that the theoretical background of handicrafts is interdisciplinary, while most of the policy analyses have been theoretical, the subject matter of economic development and public finance have been addressed. (Yang et al., 2018) Handicrafts have been seen as a consumer product for

decades. However, research in the last seven years has integrated handicrafts with design thinking and tourism research as well, not to mention handicrafts are now being perceived as tourist products. The area of sustainable tourism, including cultural, responsible, rural, and experiential tourism, etc is being a part of research from remote perspectives. (AIACA, 2017) Considering base with a theoretical framework that includes crafts as the epicenter. Policy researchers show their interest in the exporter side of the handicrafts market that earns foreign exchange. While the domestic market of handicrafts is now laid in the hands of tourism which has no managerial or centralized system to operate.

(Kumar & Rajeev, 2019) Most of the handloom and handicraft organizations in the Textile Sector are categorized under the Micro, Small, and Medium Enterprises (MSME) category. Government and research agencies suggest that the MSME sector contributes significantly to overall employment generation. Therefore, the sustainability of the MSME sector is a cause of great concern for India a developing nation. (Kapur & Mittar, 2014) says Policy and budgeting for MSMEs and SMEs have been jabbed in the economy every year yet prolonged sustainability remains a topic of great concern. (Miller et al., 1986) The increasing population exerts pressure on the vicious circle of poverty. This economic concept of the vicious circle explains not only poverty but unemployment as well. (Bertacchini & Segre, 2015) The handicrafts sector is suffering due to no permanent income for those who are willing to create a future for these art forms.

(Liebl & Roy, 2003) found that the global market is witnessing high demand compared to the Indian domestic market because of globalization. Thus, economic growth is rising due to foreign demand, but the domestic market is facing jeopardy in the related context. This has all in all shifted the consumer pattern from traditional to modern designs. The taste and preferences of the consumer have adversely been affected by western culture and fashion trends. However, some ethical brands have concentrated on vegan production, natural raw materials, and ethical production on demand, using high-priced sustainable fashion. For instance, Ecokari, Ekatra, powered by people, Tentree, (Sustainable brands for handcrafted clothing and stationery), etc. (Akil et al., 2022; Pourmoradian et al., 2021; Wondirad et al., 2022) Handicrafts have long been constrained due to a lot of problems. Their disseminated inception and generally poor level of education, and lack of information accessibility have created a host of falsifications. These are the huge challenges that are also responsible for the stagnant domestic development of handicrafts. These problems hold down returns to craftsmanship and restrict access to means of value-addition like skill-training, skill-upgradation, innovative design, and technical advancement. "Administrative inefficiency, corruption, and the play of mafia and cartels,

(Suguna et al., 2022) further raise the costs of transactions in these markets, for artisans, traders, tourists, and importers". (Grobar, 2019) The problem these industries face is not one of universal unqualified obsolescence in the face of competition from mechanized industries, rather, to survive, old skills need research, targeted to attract new buyers and to induce demand.

(Liebl & Roy, 2003) countries, where research and development on handicrafts has been done with some degree of skill, innovation in design and market structure, the outcome, has been a striking commercial success. (Barrère, 2016) "But such instances remain scarce concerning the scale of the industry and depend on the economic and political framework of the country". Thus, governmental policies and budgeting also are responsible for creating an earnest point of view, not just supply economics but also reinforcing the demand in the domestic market. (Akil et al., 2022) Marketing strategies rather than sublimating the supply of rural handicrafts need much more attention.

(Grobar, 2019) Rising studies in sustainable tourism efforts to reroute handicrafts fate by addressing it as one of the tourist products. (Choudhary & Mishra, 2022) Integrating the cultural heritage of intangible artforms, research redirects the demand certainly in a more acute framework such as responsible tourism or experiential tourism, etc. (Oyekunle & Sirayi, 2018) the concept of design thinking merges handicrafts with modern fashion and compiles the domestic market from the tourist point of view. (Rajalakshmi & Mary, 2020) The strategic marketing of destination specialty will take time to develop and needs research according to the developing pace of the country. Sustainable development in the tourism industry also requires the willingness of tour stakeholders, the hospitality industry, and community-based support. The current paper emphasizes the same direction by addressing the gap in the literature which is lacking policy research in the area of tourism and handicrafts integration. This study also finds out the ways that government policy can enrich the potency of the handicraft industry after it coalesces with tourism. In the past, there has been hardly any study that seeks the potential of the existing policy framework in this direction therefore, the main objective of this research is to study the governmental policies for the handicrafts industry in India.

3. Problems faced by Handicrafts in India

With the inception of 75 years of independence the evolution of the Indian market can be seen persuaded through a series of influence, developmental growth, and economic profits. The history witnesses use of handmade products as an essential part of the freedom fight. The use of locally made, reflected the self-sufficiency of Indians at that time. Popularizing the use of khadi and the abolition of machine-made products witnessed the Indian fight for independence. This outlines the irony of using synthetic fiber instead of khadi cloth to make Indian flags, in the

celebration of 75th Independence Day. More than 20 billion flags have been made and sold in India which were non-khadi, to support Indian craftsmen these handmade flags have created history but on the other hand, the identity of the khadi usage has been jeopardized. This is the same as what handicrafts in India have been facing for the last few decades. Overthrowing the authenticity of Indian art and design with the amalgamation of modern tech-friendly fashion, replacing the fiber, and utilizing aesthetic designs to keep handmade alive but not in its actual form. The artisans of handicrafts always have created promising artifacts but now mere copying the soul of craft designs multinational, profit houses are stealing away the market and creating a big pothole for handicrafts to dive into oblivion. This is keeping the trend of ethnic art intact but does not benefit the one who deserves it.

The knack for creating a duplicate in the name of designing is taking away the sway of heritage that India tends to outshine in the world, think about the unique designs of Indian artisans that have been abducted by big house designers.

This is swerving in the textile and hand-woven fabric and saris, etc. India's signature assortment of weaves has faced a lot lately. It is the inspiration of the weaver's cultural spirit, thanks to a few hundreds of weavers in every State, their steely nerve to anchor themselves to their ancestral legacy has perpetuated the heritage of Indian culture. Over the centuries, it is India's credit for tackling every hurdle to survival, whether during British colonial rule or with the advent of the power loom. But now with the over hurdling of copied products, cheap availability and mass production has taken away the market of handloom and handicrafts. It is thus, losing the spirit of regular use items to occasional purchases.

4. Monopoly versus Perfect Competition

The consumer population in India shows an inclining preference for machine-made products. Factory-made products have the advantage of consistent quality, whereas this lacks in general handcrafted textile, on the brighter side handlooms create wonders in the shape of clothes and cottage-based products. Large companies have ample budgets for market research, product development, and advertising, which allow them to keep in tune with consumer needs. While artisans or handicrafts sellers are failing to invest in research and development. machine-made products are usually low-priced handmade products due to various reasons such as economies of scale, cost of credit, access to infrastructure, costs of marketing, and retailing. Craft marketing programs also delved deep into small but profitable export markets and as a result, had few resources to build a sustainable domestic market. Additionally, with a steady decline in consumption of traditional products, such as the handloom sari, handcrafted furniture, handicrafts as kitchenware, handicrafts as utilitarians, etc. we have an overall

pessimistic picture of the domestic handicrafts market. However, there is a new urban demand for articles of everyday use that use old artisanship, such as hand-printing and embroidery. The rising demand is less but sufficient to replenish the kingdom of Indian art and crafts. In some cases, fashion designers, and start-ups have adapted and enhanced old artistry to meet this new demand using the artisans as primary producers. Such efforts are often commercially successful. All this points to a rapidly changing buyer profile in the domestic market. In the past, buyers were wealthy patrons (especially for quality products) or simple villagers (for everyday items) who lived where the goods were made. Products made were directly absorbed by the villagers, elite residents, and visitors. However, today, middle-class shoppers have more flexible lifestyles and preferences. They usually live in cities and have different needs when it comes to modern upholstery, clothing, and household items. This major shift in consumption and consumer profiles does not effectively align Indian handicraft consumption with global consumption. It is hurting some handicraft businesses. For example, stone cutting, and wood carving have not disappeared, but one of their main uses, traditional architecture, has all but disappeared. And it is just a matter of time before it will completely vaporize from the cultural ground due to artisans turning off their artistry for mere livelihood. In Rajasthan, however, government-aided projects are working on the development of 'heritage tourism' which means restructuring historic buildings to give them a new shape. This step has provided renewed patronage for the cultural embodiment, which incorporates pseudo-traditional carvings. Creative owners and architects have also researched the idea of adapting traditional-style wall carvings, and architectural elements (doors and windows) to new and modern buildings to relive the culturally significant era from ancient times.

In the apparel industry, the demand for handwoven fringed sarees is declining for everyday wear, while the use of hand-blocked patterns on sewn women's dresses is increasing. More subtle shifts in taste are evident, especially regarding design. Many buyers are looking for new motifs, new colors, and simpler designs. Block print designs go in and out of fashion just like any other apparel product. This process of changing tastes is universal and happening increasingly in all craft markets. Craftsmen and merchants around the world are experimenting in this direction. However, experimentation by artisans themselves rarely leads to commercial success. They are usually the work of poor artisans which is framed and sold at a price that is enjoyed by retailers and intermediaries. For example, traditional footwear is made with a plastic upper to make it "modern". Alternatively, television showcases are designed in a traditional antique style in the mistaken belief that they will appeal to the discerning urban shopper. On the other hand, the new challenge is to design new products/appearances and to

retail these goods for export, foreign tourists, or India's elite market. This is to a large number of people with no cultural or family ties to the crafts. In most cases, there are no barriers to entry to trade, which is worsening the competition against local crafts, for instance, available Chinese manufactured goods, pottery, and cutlery against Indian-originated goods which are not even available at city plazas or supermarkets.

As economics prevails, handicrafts in the country should be the monopolistic market managed by artisans as they are the primary producers. The business of handicrafts is more exploitative to these primary producers on account of income generation, inequality, job environment, and sustainable 5.livelihood. India's manufacturing industry still fights to uphold the organizational framework in the case of the Handicrafts sector, the exploitation of the name of middlemen income, retailers' income, etc are overall jeopardizing the primary income of artisans. Ironically, the flag bearers of heritage and cultural art forms are forced to live under the poverty line due to a lack of cognizance and market management. The entire product market is playing under perfect competition as the international imports from cheaply available products can run on the same level as the ones manufactured in the country. Therefore, the need to mind these resources is of utmost importance. Safeguard the cultural heritage and maintain a sustainable livelihood for artisans, poverty eradication, etc. as said by the sustainable development goals.

5. Identified Needs

It is true to account that the exquisitely handcrafted masterpieces with considerable artistic content should trade at a higher price in the market. Such high quality and medium volume handcrafted products are highly valued for the development of the 'Handcrafted in India' brand. It should be positioned in a niche market through strong advertising and promotional activities that accompany it. This will create a customer willing to pay a much higher price. Before sufficing these barriers, the niche must be strategically created. The market for handcrafted items must be consciously maintained to attract consumers in the name of authentic, aesthetic, and ethnic values. The need is to create a latent attraction toward this product. Enriching the availability of this product, live curation centers should be accompanied. Brand values and ambassadors need to be assigned. These designs should make the buyer fall for them at first sight, are a lot of existing small businesses that are concerning the same strategy by employing local artisans and rebranding these products in the name of ethical purchase, vegan products, and sustainable brands. For example, poweredbypeople.com, ekatra.com, authindia.com, etc.

Artisans in this segment also receive direct support such as toolkits, education, and social security. To address a macro-level issue, the need is to create a wide coverage of resources that can

outshine the artisanal community and their crafts. This can be addressed by strengthening communities and organizing them into community groups. By identifying the crafts clusters, including potential small businesses, and entrepreneurs. These clusters will form producers' associations to organize the market of a place known for its art and heritage.

6. Government Initiatives

To address the issues of the handicrafts market government takes steps to sustain the art and heritage. Thus, by helping the artisans' community, engaging them with the temporary market, haat, etc. they are providing livelihood to artisans and small business owners. The schemes envisage full synergies built into the potential of craft clusters by providing both need-based soft and hard (infrastructure) interventions. The smooth delivery of other inputs is also ensured, along with worker benefits and marketing assistance. In addition, the lack of sufficient and reliable data on craftsmen, such as socioeconomic status, living conditions, and family, is a major bottleneck for planning and policymaking in this area. Extensive surveys and studies are therefore being conducted to build a comprehensive database that can help develop appropriate interventions within the cluster.

Bearing in mind that the promotion of handicrafts and handloom is linked to tourism, the number of foreign and domestic tourists is steadily increasing due to rising disposable incomes and a rising middle class in the country.

The National Craft Development Program to develop and promote the craft sector includes the following elements:

• National Craft Development Program

• Marketing support and services

• Skill development in the craft sector,

• Ambedkar Hastshilp Vikas Yojana [AHVY]

• Direct benefits to craftsmen (welfare)

• Infrastructure and technical support

• Research and Development

To address these schemes three approaches are being pursued:

• Promoting premium handicraft products for a niche market

• Expansion of production bases for utility, lifestyle, mass-production of Handicrafts products

• Conservation and protection of heritage/sick artifacts

Sr. No	Category	Programs/ Scheme Name
1.	Marketing Support and Services	1. Domestic Marketing i) Gandhi Shilpa Bazaar (GSB)/craft Bazaar (CB) ii) Exhibitions (including thematic exhibitions) iii) National Handicraft Fair (NHF) iv) Hiring of built-up space in events organized by the other organizations v) Craft Awareness Program (CAP) vi) Craft Demonstration Program (CDP) 2. Marketing events in India and abroad i) Participation In International Fairs and Exhibitions ii) Folk Crafts Festival of India iii) Awareness Campaign Abroad and India iv) International Craft Exposure Program/Cultural Exchange Program v) Buyer Sellers Meet and Reverse Buyer Seller Meet in India and Abroad vi) Compliance Social and Other Welfare Measures vii) Marketing Workshop/Seminar/Symposiums in India and Abroad 3. Publicity and brand promotion i) publicity and brand promotion via print, electronic and social media ii) web marketing iii) integrated sale cum exhibition fair exhibition event on virtual platforms

Sr. No	Category	Programs/ Scheme Name
2.	Skill Development in Handicraft Sector	1. Design and Technology Development Workshop (DDW) 2. Guru Shishya Hastshilp Prashikshan Program (GSHPP) 3. Comprehensive Skill Updation Programme (CSUP) 4. Improve Toolkit Distribution Program (ITDP)
3.	Handicrafts Artisanal Support	Ambedkar Hastshilp Vikas Yojana (AHVY) 1. Diagnostic Survey of Identified Craft Clusters and Mobilization of Artisans into SHGs 2. Preparation of DPR 3. Formation of Producers Company 4. Working Capital Support Assistance 5. Workshop cum Seminar 6. Entrepreneurship Development Programme 7. Project Implementation and Management 8. Design and Mentorship Program 9. Design Assistance and Overseas Market 10. Study Cum Exposure Tour
4.	Direct Benefits to Artisans	1. Support to Artisans in Indigent Circumstances 2. Interest Subvention 3. Margin Money 4. Issue Renewable of Photo Identity Card and Creation of Databases 5. Bima Yojana to Handicraft Artisans i) Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) ii) Pradhan Mantri Suraksha Bima Yojana (PMSAY) iii) Converged Modified Aam Aadmi Bima Yojana (CAABY) 6. Awareness Camp/Chaupal/Shivir 7. Workshop cum Seminar 8. Handicrafts Awards a) Shilpa Guru Award b) National Award c) National Award for Design Innovation
5	Infrastructure and Technology Support	1. Urban Haat 2. Emporia 3. Marketing and Sourcing Hubs 4. Handicraft Museum 5. Craft Based Resource Centre 6. Common Facility Centre 7. Raw Material Depot 8. Testing Laboratories 9. Craft Village 10. Technology Upgradation Assistance to Exporters and Entrepreneurs 11. Construction of office Infrastructure/Institution and Revitalising/Restructuring of Existing Infrastructure/Institution and Any Other Infrastructural/Institution to be Created at Departmental Level
6	Research and Development	1. Surveys And Studies 2. Financial Assistance for Registration of GI Crafts 3. Financial Assistance to Organization for Evolving Developing a Mechanism for Protecting Crafts Including Endangered Crafts Designs Heritage and Traditional Knowledge 4. Conducting Census of Handicraft Artisans of The Country and Publishing the Same in Handbook E-book Format for Future References 5. Assisting Handicraft Exporters in Adoption of Global Standards Including Handicraft Mark Branding Bar Coding and Other Similar Standards

Sr. No	Category	Programs/ Scheme Name
		6. Conducting Workshop Seminar on Issues of Specific Issue Related to Handicraft Sector 7. Evaluation Impact Assessment Studies of Handicraft Schemes 8. Need Based Financial Assistance to Government Departments Ministries Institutions of National Importance and Export Promotion Councils
7	Handicraft Cluster Development	Comprehensive Handicraft Cluster Development Scheme(CHCDS) 1. Employment Generation 2. Better Living Standard for Existing Artisans 3. Foreign Exchange Earnings 4. Substantial Increase in Quality and Value-Added Production 5. Increase In Business of Small Entrepreneurs 6. Savings In Cost by Manufacturers in The Cluster Due to Better Infrastructure of Government Induced Benefits 7. Revenue Generation to Local Bodies and States and Central Government 8. Growth Of Industry in An Organised

Source: Office of the Development Commissioner (Handicrafts, Ministry of Textiles, Government of India

Considering these schemes, the government is planning to achieve an agenda of creating a safe space for handicraft artisans to sell their products, by using them through low-cost investment, subsidized renting, and low-interest loans. This will empower artisanal formal groups to flourish socially and economically. Government planning will ensure longevity in the handcrafts business which will ripple the effect of employment generation, tech upgradation, and competitiveness among producers. The strategies for marketing support, branding, and resource mobilization will ensure economic growth in the long term. Mobilization of artisans in business entities, for instance, formation of producers' companies, artisans cooperations, community-based development, etc. have been insured. The government aims to supply profit to handicraft artisans so that they can continue their ancestral legacy through cultural crafts. The planning for 2021-2025 will run on commercial lines with marketing intelligence and a professional management team to achieve the main aim of creating market space and formalizing and bringing an enterprising spirit among handicraft artisans.

7. Discussion & Recommendations

These achievable objectives of the Indian government point towards the artisan's upliftment, economic and social allegiance, etc. The schemes address the single-sided problem. The concentration of these schemes tends to address the supply side of the market, by completely ignoring the demand side economics. 75 years of independence and counting, India is walking away from the cultural values and Indian rich heritage. Thus, the demand for locally made products needs to be injected among the buyers in the Indian domestic market. The outline of handicrafts being pertained as occasional purchases must become a choice over western influence. The need is to reroute the lost charm of Indian ethnic wear, products, and handmade products.

Research witnesses the influence of tourism on the local destination market. Cities and popular tourist places can fill the gap and engross the consumers in community upliftment. As a part of economies of scale, the rising tourism outlook can enhance the intensifying interest in handicrafts. Denoting an intentional and spiritual lifestyle, the concept of experiential tourism, leisure activities can include crafts making and artistry, inside the environment of resorts and homestays. The free and small workshops can be organized by tourist stakeholders to engage the tourist in recreational activities. Mud pottery is one such example, which combines experiential learning and art therapy. This helps in rewinding the thoughts and emotional patterns of the human mind, which is why people travel to new destinations. Thus, one can reconnect to the lost cultural activities of India and can implant a sense of affinity towards lost art and crafts. The positive slipovers will, in turn, revive the demand for locally made products, wearing, and using handmade, handloom, etc. as this study has explored the positivity of handicrafts policies, which are impacting the ground for creating a market space for artisans and business owners. This is also a harsh reality that due to a lack of awareness of handicrafts people are reluctant to buy handmade or locally made products. Thus, implacably the policies need revision with the current pattern of the market. Viewing the marketplaces having an outlet for Chinese products rather than Indian crafts, commercially defines the degradation of consumer demand which is thus, triggered due to skewed supply. City old markets, main handicrafts markets are clustered and concentrated at a specific place only, thus, it is difficult for domestic consumers to reach out and purchase handicrafts on regular basis. Therefore, the concentration of impeccable art forms is addressed by tourist visitors only. For which the artisans

and market are not fully geared. To create a sound selling pitch marketing strategy and planning are necessary to be organized.

International Market and Indian Handicrafts

The handicraft industry has not just been facing downtime challenges in India only but in several developing and developed nations as well. some of the countries have produced international policies and trade restrictions to safeguard the local/domestic handicrafts market, yet some are still struggling with overseas competition like Chinese handmade imports. The world trade organization also restricts the invasion of overseas trades which is jeopardizing the local economy and employment opportunities for the rural skilled laborers. Thus, the formalization of data is necessary to report the trade invasion. Grobar (2017) points out that a key impediment to the use of the safeguard measure for handicrafts is the lack of data on handicrafts-related employment. The domestic market in India is highly unorganized and the account of income inequality, job availability, and the jobless ratio is impossible to determine. It is therefore unlikely for a nation that witnesses a surge in imports of handicrafts or substitutes to prove that its domestic industry has been significantly harmed due to cross-border trades. In way to be eligible for safeguard protection, a nation must supply sufficient data in the sector for job losses. The example of India is at the top, the consideration of an application for safeguard measures was rejected due to lack of data availability. A study by EY funded through the export promotion council of handicrafts revealed that India cannot look for safeguard duty on a Chinese import. This is due to the unfiled data on the impact of Chinese products on the Indian domestic market of handicrafts (Grobar, 2017). Thus, India is not eligible to ask for safeguard trade measures against the Chinese, which is internally taking away the local business of the Indian artisans. The closest and finest substitutes for every art piece are available in the Chinese market and yet it is imported at lesser rates than that of Indian handicrafts.

Indian handicrafts need much more management than is availed on paper and government data. The country holds more than 50% middle income group who are forced to buy Chinese over Indian products because of costs that has a significant difference. Thus, the average pocket expenditure of normal Indian citizens does not allow them to buy local handicrafts because of their high costing. Indian handicrafts are being perceived as luxury products profoundly by the low-income population in India.

(Barrère, 2014) marks a crucial point that the heritage has a collective nature, it belongs to everyone in the population be it poor or rich, male, or female, kid, or adult. Society holds its right over it, thus making it difficult to preserve when it is served to everyone. Similarly, no single entity is responsible to reproduce or regenerate the lost heritage. Resultantly, crafts are the public good, or to be precise the heritage and cultural association of cultural crafts comes under public scrutiny. This leaves

categories of art and crafts vulnerable to competition and globalization against mass-produced finished goods. There is no entity or organization responsible to preserve the stagnation of handicrafts against growth and development. It is the only choice of citizens and consumers to protect their culture and traditional art forms.

(Scrase, 2003) suggests bifurcating handicraft products into two main categories that are "elite" & the "quotidian" which will be based on their consumer base and cost. Thus, the market can then deal with different problems of different crafts. The quotidian handicrafts would include the lower priced items such as cloth purses, leather wallets, and sandals/footwear, etc. when it comes to elite crafts, they are easy to be sold in the international market as well, the fine and unique artistry sells itself. Mostly it is the Veblen effect.

The impact of globalization is more on quotidian crafts as they are under competition with factory-made, mass-produced items. These are such a close substitute for handmade or hand-loomed that consumers are ditched into market goods rather than handmade, and exceptional quality makes it difficult to distinguish in the first time. Moreover, the pricing differs drastically in the case of machine-made textile over handmade. This is making it difficult for artisans to survive in long-term competitive markets. however proper policy design and management can make an enormous difference to run the competitiveness in the domestic handicrafts market. Thus, the need is to first understand how bifurcating the market can work for Indian consumers. The display of art culture needs to be revived as per the contemporary mindset. Through social media usage and defining art therapy for youngsters who are refrained from traditional perception. The cultural revival needs to be done implicitly by using new and innovative nomenclatures. For example, art educational institutions can introduce traditionally and lost art forms in the curriculum to revive the importance of cultural heritage. Other than that, the socio-psychological research may develop mind and soul connections for teenagers who survive mental health issues, by introducing different artforms from the past such as pottery making, painting, tie and dye, etc. these can be introduced as therapy and recreational work other than studies for modern study frameworks.

8. Conclusion

The research highlights various aspects of the handicrafts industry. It includes current policy measures and deals with the art design and cultural value of the handicrafts industry. The overwhelming need to safeguard countries' cultural values, and tangible and intangible art forms are also equally important as that of economic growth. China being the topmost handicrafts exporting country, developed a robust supply chain to engross the labor-intensive market, while exposing the world to cheap handmade hybrids. This does not only establish the Chinese

product market but has also out throned the local crafts of other developing countries like India. the current literature is scarce when it comes to the remedial measures for the handicraft industry, its association with tourism and educational institutions, etc. therefore, this paper will act as a pioneer to inclined empirical research and development for the domestic market of developing countries. Already working governmental schemes to safeguard handicrafts culture in the country dwells in conventional ways of investing and uplifting, these planning structures do not ensure consumer footfalls or the demand inducement. This is acting as a great bottleneck for this industry to flourish on the ground level. the paper accounts only for domestic market economics rather it does not consider export benefits. This is because if the country is working to achieve sustainable development goals by the year 2030, it has to unify the combination of safeguarding culture, remedial measures for poverty and unemployment, and favorable steps towards climate change. The string to sustainable development can be knotted through sustainable tourism, responsible cultural development, and safeguarding the traditional art forms. Thus, this research ends with futuristic recommendations based on policy changes and guidelines for future research in the area of handicrafts market development, and tourism management to develop a sustainable future supported by SDGs and social enlightenment.

9.References

- AIACA. (2017). National Handicrafts Policy Report. 42. http://www.aiacaonline.org/wp-content/uploads/2018/06/National-Handicrafts-Policy-Report_Full-version_Final.pdf

- Akil, A., Pradadimara, D., Syarif, E., & Beddu, S. (2022). Spatial Historical Evolution of Urban Tosora Cultural Heritage. International Review for Spatial Planning and Sustainable Development, 10(3), 188–212. https://doi.org/10.14246/IRSPSD.10.3_188

- Barrère, C. (2014). Cultural heritages: From official to informal. City, Culture and Society, 7(2), 87–94. https://doi.org/10.1016/j.ccs.2015.11.004

- Barrère, C. (2016). Cultural heritages: From official to informal. City, Culture and Society, 7(2), 87–94. https://doi.org/10.1016/J.CCS.2015.11.004

- Bertacchini, E., & Segre, G. (2015). Introduction: Culture, sustainable development and social quality: A paradigm shift in the economic analysis of cultural production and heritage conservation. City, Culture and Society, 7(2), 69–70. https://doi.org/10.1016/j.ccs.2015.12.007

- Bhat, J. A., & Yadav, P. (2016). The Sector of Handicrafts and its Share in Indian Economy. Arabian Journal of Business and Management Review 2016 6:6, 6(6), 1–6. https://doi.org/10.4172/2223-5833.S3-009

- Chaudhauri, T. D., Singhi, N., & Sengupta, S. (2018). Understanding Poisitioning and Marketing of Handicrafts from Bengal: An Example. CBS Journal of Management Practices, 5(1), 75–86.

- Choudhary, A., & Mishra, P. (2022). Indian Handicraft: An Artistic way to Sustainable Development (P. Mishra & A. Choudhary (eds.); 1st ed.). Nitya. https://doi.org/10.4324/9781003052517-10

- Datta, D. B., & Bhattacharyya, S. (2016). An Analysis on Problems and Prospects of Indian Handicraft Sector. Asian Journal of Management, 7(1), 5. https://doi.org/10.5958/2321-5763.2016.00002.0

- Ghouse, S. M. (2017). Export challenges to MSMEs: A case study of Indian handicraft industry. International Journal of Applied Business and Economic Research, 15(10), 339–349.

- Grobar, L. M. (2017). Policies to promote employment and preserve cultural heritage in the handicraft sector. Https://Doi.Org/10.1080/10286632.2017.1330887, 25(4), 515–527.https://doi.org/10.1080/10286632.2017.1330887

- Grobar, L. M. (2019). Policies to promote employment and preserve cultural heritage in the handicraft sector. International Journal of Cultural Policy, 25(4), 515–527. https://doi.org/10.1080/10286632.2017.1330887

- Kapur, H., & Mittar, S. (2014). Design Intervention & Craft Revival. International Journal of Scientific and Research Publications, 4(10). www.ijsrp.org

- Kumar, D., & Rajeev, P. V. (2019). a New Strategic Approach for Marketing of Handicraft Products. International Journal of Applied Services Marketing Perspectives © Pezzottaite Journals, 2(3), 540–543. https://www.researchgate.net/publication/331233388

- Liebl, M., & Roy, T. (2003). Handmade in India: Preliminary Analysis of Crafts Producers and Crafts Production. Economic and Political Weekly, 38(51), 5366–5376.

- Majeed, I. (2018). Indian Handicra Industry and Globalization: An Analysis of Issues and Challenges Cite this paper Indian Handicraft Industry and Globalization: An Analysis of Issues and Challenges. American International Journal of Research in Humanities, Arts and Social Sciences AIJRHASS, 19–127. http://www.iasir.net

- Miller, H. M., Brown, E. E., & Centner, T. J. (1986). Southern Appalachian Handicraft Industry: Implications for Regional Economic Development. Review of Regional Studies, 483. https://doi.org/10.52324/001c.9490

- Mishra, J. (2013). Aavaran: creating niche through contemporary traditional textiles. Emerald Emerging Markets Case Studies, 3(2), 1–12. https://doi.org/10.1108/EEMCS-AUG-2012-0143/FULL/HTML

- Murray, K., Hughes, P., Edwards, M. L., Kiem, M., Bamford, R., Ferraro, E., White, R., Cox, E., Bebbington, J., Wilson, S., & Wood, S. (2011). craft + design enquiry Sustainability in Craft and Design Edited by Kevin Murray. The Triple Bottom Line: Does It All Add Up?, 4(3), 300. http://press-files.anu.edu.au/downloads/press/p211931/pdf/book.pdf?referer=1184

- Oyekunle, O. A., & Sirayi, M. (2018). The role of design in sustainable development of handicraft industries. African

Journal of Science, Technology, Innovation and Development, 10(4), 381–388. https://doi.org/10.1080/20421338.2018.1461968

- *Pourmoradian, S., Shoari, A. V., Omarzadeh, D., Sharifi, A., Sanobuar, N., & Hosseini, S. S. (2021). Article an integrated approach to assess potential and sustainability of handmade carpet production in different areas of the east Azerbaijan province of Iran. Sustainability (Switzerland), 13(4), 1–21. https://doi.org/10.3390/SU13042251*

- *Rajalakshmi, G. R., & Mary, C. A. (2020). Rural Entrepreneurship: a Study on Internal Environmental Factors Influencing the Business Performance of Rural Micro, Small and Medium Enterprises (Msmes) in Coimbatore District. Strad Research, 7(8), 1–10. https://doi.org/10.37896/sr7.8/001*

- *Scrase, T. J. (2003). Precarious production: Globalisation and artisan labour in the Third World. Third World Quarterly, 24(3), 449–461. https://doi.org/10.1080/01436590320000084401*

- *Shaikh, S. M. (2020). A Study on Market Opportunities & Consumer buying Behaviour towards Indian Handicraft Products. 20(10).*

- *Sharan, V. D., Priya, A., & Shrivastava, M. K. (2020). Crafting the Way Forward: Sustainability Model for Indian Rural Artisans. … Journal of Management (IJM …, 11(12), 3028–3036. https://doi.org/10.34218/IJM.11.12.2020.284*

- *Sharma Hitesh, Karmakar Sougata, & Chakrabarti Debkumar. (2017). International Conference on Recent Trends and Sustainability in Crafts & Design A treatise on Recent Trends and Sustainability in Crafts & Design. In A Treatise On Recent Trends and Sustainability in Crafts & Design. www.groupexcelindia.com*

- *Suguna, M., Shah, B., Sivakami, B. U., & Suresh, M. (2022). Factors affecting repurposing operations in Micro Small and Medium Enterprises during Covid-19 emergency. Operations Management Research, 0123456789. https://doi.org/10.1007/s12063-022-00253-z*

- *Throsby, D. (2014). Investment in urban heritage conservation in developing countries: Concepts, methods and data. City, Culture and Society, 7(2), 81–86. https://doi.org/10.1016/j.ccs.2015.11.002*

- *Upadhyay, M., & Jain, U. C. (2019). Managerial Challenges of Handicraft Industry: an Indian Perspective. International Journal of Research -GRANTHAALAYAH, 7(11), 122–126. https://doi.org/10.29121/granthaalayah.v7.i11.2019.3719*

- *Vyshak, A., Vijayan, A., & T, P. A. (2018). Development with Sustainability (A Study of Small Scale Sector with Special Reference to Handicrafts and Handlooms). 119(16), 1323–1335.*

- *Wondirad, A., Bogale, D., & Li, Y. (2022). Practices and challenges of developing handicrafts as a core tourism product in Chencha and Konso, southern Ethiopia. International Journal of Cultural Policy, 28(3), 306–326. https://doi.org/10.1080/10286632.2021.1938560*

Yang, Y., Shafi, M., Song, X., & Yang, R. (2018). Preservation of Cultural Heritage Embodied in Traditional Crafts in the Developing Countries. A Case Study of Pakistani Handicraft Industry. Sustainability, 10(5), 1336. https://doi.org/10.3390/su10051336

Author's Bio

Akanksha Choudhary

Miss Akanksha Choudhary is a UGC NET qualified individual, and currently pursuing research at the Department of Economics, Manipal University Jaipur. Her major research area is sustainable development, sustainable tourism, international relations, & Indian handicrafts sector. She has acquired her bachelor's degree from Banasthali University & master's from Banaras Hindu University. In her area of research, she possesses more than 10 published papers in several edited books and Journal (ABDC), she has presented papers in more than 10 international conferences and 5 national conferences and seminars.

Dr. Poonam Mishra

Dr. Poonam Mishra is an Assistant Professor at the Department of Economics, Manipal University Jaipur. She has been into research and academics for the last 8 years; her research interest includes areas from sustainable tourism and development. Her subject expertise involves economic policy, developmental economics, the Indian economy, and sustainable development. She has pursued her education at distinctive universities in India including Banasthali Vidyapith and Dr. Hari Singh Gour Central University Sagar. Her research interests have bagged her more than 15 prestigious publications in various books and ABDC-indexed journals, including 20+ paper presentations in different national & international conferences.

An Analysis of Revenue of Urban Local Bodies in Rajasthan: A Case Study of Jaipur Municipal Corporation

Dr. Meenu Maheshwari *
Mrs. Hemlata Tak **

Abstract

The objective of the study is to analyze the various sources of revenue of urban local bodies in Rajasthan with special reference to Jaipur municipal corporation. For the purpose of the study, the data for the period of 8 years ranging from 2012-13 to 2019-20 have been considered and analyzed through trend analysis. The relevant hypotheses related to absolute value of revenue, percentage share and growth rates over the years have been developed which have been tested using Two-way ANOVA. It has been found from the results that each source of revenue of Jaipur municipal corporation has been volatile in nature and there has been a significant difference in revenue, its percentage share and growth rates over the years. It has been concluded that political intention to act on recommendations given by Planning commission back the growth of urban local government in future.

Keywords: *Local government, Urban local bodies, Municipal Corporation, Revenue, Urbanization.*

1. Introduction

David Wilson stated- "Local Government is a large geographically defined multifunctional organization pursuing a variety of social, political and economic objectives either through the direct provision or through the sponsorship, indirect funding, regulation or monitoring of a very extensive range of services to its local community." It owns a statutory status and management of their own affairs by the people of a locality through their elected representatives within their jurisdiction, geographical boundaries and the power to raise taxation independently. Though, local government has always existed but it molded into organized formal institution with the advent of British. The municipal corporation was first time set up in Madras in 1687 but it was in 1793 through charter act that it acquired statutory bases due to the political pressure and judicial intervention and the need for economic liberalization and citizen involvement in local affairs. India revamped its two tier federal structure by inserting third tier called local government in rural and urban area which was enshrined in constitution by 73rd & 74th amendment of the article 243P passed in 1992 that added IX, IXA, 12th schedule.

The 74th Constitutional Amendment Act entered into force on June 1, 1993 and gave urban local bodies the power to exercise

18 functions. The functions listed on 12th schedule includes functions that are entrusted to urban local government such as urban planning, socio-economic development, land use buildings, regulation of slaughter houses, slums and burials, water and electricity supply, sanitation, public health, fire service, vital statistics including registration of births and deaths, public amenities like street lightning, playgrounds, public conveniences and promotion of cultural, educational and aesthetic aspects etc. The municipal functions are divided into two types: Obligatory that must be performed and Discretionary that is performed only if funds permit.

After independence, urban institutions received a new impetus while being more democratic with the abolishment of old practices. Rajasthan has been the leading province in urban local self- government. The first municipality of Rajasthan was set up in Abu in 1865. Bikaner, Kota and Jodhpur were also established with municipalities in 1885 but due to British rule, these institutions were unable to make adequate use of autonomy. In 1951, the Kasba Municipality Act was passed in Rajasthan due to the need for a uniform and common law after the integration of 222 princely states. After the Rajasthan Municipal Act was passed in 1959, the municipal councils and municipalities of all towns and cities are governed.

Associate Professor, Department of Commerce and Management University of Kota, Kota (Raj.)
 E-mail: drmeenumaheshwari@gmail.com

* * *Assistant Professor, Government College, Bundi (Raj.)*
   hemlata.tak@gmail.com

Hence, this study intends to analyze the revenue of urban local bodies of Rajasthan with special reference to Jaipur Municipal Corporation.

2. Literature of Review

TSejdini (2014) reviewed the literature on developing the indicators related to finances and analyze how well it applies to municipalities in Macedonia. In order to build a set of financial indicators that may be used to assess the (financial) performance of local government units in the Republic of Macedonia, a more comprehensive approach is attempted in this article. Most studies that have a performance evaluation focus do not provide a comprehensive basis for the generation of the system of indicators. He suggested that a set of financial or budget metrics pertaining to the income and expenditures in Macedonian municipalities is the study's outcome.

Nallathiga and Campus (2009) in their study offered a cross-sectional examination of the financial health of 35 urban local bodies (ULBs) in India, looking at their financial foundation, its sufficiency in comparison to standards, and the performance of their revenues and expenditures. According to the research of municipal finances, the majority of ULBs are producing a modest revenue surplus with a tiny resource imbalance. According to the research of municipal finances, the majority of ULBs are producing a modest revenue surplus with a tiny resource imbalance. However, there is room for improvement by increasing user fees and tax collection in the ULBs, which also opens the door for public-private partnerships and access to market money for project funding.

Turley, Robbins and McNena (2015) presented a methodology for evaluating local governments' financial performance. In this they applied numerical and narrative analysis for the financial performance metrics to Ireland's major local authorities. They showed that urban municipalities do significantly better in terms of financial independence. The choices made regarding the funding of rural councils to make up for lower commercial rate income and other forms of self-income resulting from geographic disadvantages and differences have an impact on this discrepancy.

Kleynhans and Coetzee (2019) examined the financial standing of municipalities in the KwaZulu-Natal province (KZN). The results implied that the majority of the chosen socio-economic factors are significant in explaining some of the changes in municipal financial situations in the absence of individual effects. However, cross-section fixed-effects considerably enhance the model's overall performance, indicating that the variables impacting local financial problems are likely unobservable and particular to each municipality.

Bandyopadhay and Sharma (2020) evaluated KMC's financial health by measuring the difference between revenue and expenditures during the last 10 years. It has been determined that the KMC's own income is insufficient to cover its expenses. Even after taking into account PPP and government assistance, expenses still outpace income. More of a decline in revenue incomes than revenue expenditures have been seen. Loans have been raised to close this shortfall; however, this is not a long-term sustainable option.

3. Research Gap

On the basis of the review of literature, it has been observed that no study has been undertaken related to the fund management of the municipal corporation of the Rajasthan considering its all revenues and expenditures. Also, no study has been undertaken for the considered period and considered variables. Thus, in order to fill in the research gap, the study entitled "An Analysis of Revenue of Urban local bodies in Rajasthan: A Case study of Jaipur Municipal Corporation" has been intended to be carried out to analyze the various sources of revenues of the sampled municipal corporation of Jaipur.

4. Research Methodology

Objective of Proposed Research Work:

- To analyse the trend of various sources of revenue of the Jaipur municipal corporation.

- To compare the year-wise and source-wise incomes of the Jaipur municipal corporation.

- To compare the percentage share of sources of income of the Jaipur municipal corporation over the years.

- To compare the growth rates of sources of income of the Jaipur municipal corporation.

Hypotheses:

- H01: There is no significant difference in the year-wise and source-wise income of the municipal corporation.

- H02: There is no significant difference in the percentage share of sources of income of the municipal corporation over the years.

- H03: There is no significant difference in the growth rates of sources of income of the municipal corporation.

5. Methodology

The data collected from secondary sources related to various sources of income of Jaipur Municipal Corporation (JMC) over a period of 8 years from 2012-13 to 2019-20 have been taken for the purpose of the study and have been analyzed through trend analysis. The relevant hypotheses have been tested using Two-way ANOVA and analysis and interpretation has been stated thereafter.

6. Data Analysis and Interpretation

Table 1 presents the data of various income sources of JMC over the years

S.No	Years	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-2020	Average
1	Total Revenue	45048.56	49135.89	51838.50	54185.45	56229.79	57303.65	58156.30	60051.92	53993.76
2	Index Base Year	100	109.07	115.07	120.28	124.81	127.19	129.08	133.29	
3	Growth Rate	-	9.07	5.5	4.53	3.77	1.91	1.49	3.26	4.22
4	Income From Taxes	7036.04	3426.47	10831.67	12818.73	15360.44	8966.54	12889.27	12350.93	10460.01
5	Index Base Year	100	48.7	153.95	182.18	218.31	127.45	183.21	175.55	
6	Growth Rate	-	-51.3	216.12	18.34	19.83	-41.62	43.75	-4.18	28.71
7	Assigned compensation	18910.64	20801.72	22881.88	25170.02	27687.05	30455.76	33501.34	36851.47	27032.49
8	Index Base Year	100	110	121	133.1	146.41	161.05	177.16	194.87	
9	Growth Rate	-	10	10	10	10	10	10	10	10.00
10	Rental Income	47.36	179.59	55.05	71.88	71.84	230.73	101.52	113.95	108.99
11	Index Base Year	100	379.2	116.22	151.75	151.67	487.12	214.33	240.56	
12	Growth Rate	-	279.2	-69.35	30.57	-0.05	221.17	-56	12.24	59.68
13	Fees & User charges	6264.74	9911.02	7027.97	4653.91	6188.66	9705.3	7772.88	7517.38	7380.23
14	Index Base Year	100	158.2	112.18	74.28	98.78	157.91	124.07	119.99	
15	Growth Rate	-	58.2	-29.09	-33.78	32.98	56.82	-19.91	-3.29	8.85
16	Revenue grants contribution and subsidies	4196.95	3082.47	167.03	288.56	286.63	0	163.42	0	1023.13
17	Index Base Year	100	73.45	3.97	6.86	6.81	0	0	0	
18	Growth Rate	-	-26.55	-94.6	72.76	-0.67	0	163.42	-163.42	-35.41
19	income from corporation assets and investment	5941.63	7875.69	9055.47	7143.94	3195.21	2048.13	653.54	830.8	4593.05
20	Index Base Year	100	132.55	152.4	120.23	53.78	34.47	11	13.98	
21	Growth Rate	-	32.55	14.98	-21.11	-55.27	-35.9	-68.09	27.12	-15.10
22	Miscellaneous income	2651.16	3858.9	1819.41	4038.4	3439.94	5897.16	3074.29	2387.37	3395.83
23	Index Base Year	100	145.55	68.63	152.33	129.75	222.43	115.95	90.05	
24	Growth Rate	-	45.55	-52.85	121.96	-14.82	71.43	-47.87	22.34	20.82

Source: Compiled from http://www.jaipurmc.org/Jp_HomePagemain.aspx

Figure 1 presents the trend of various income sources of JMC over the years.
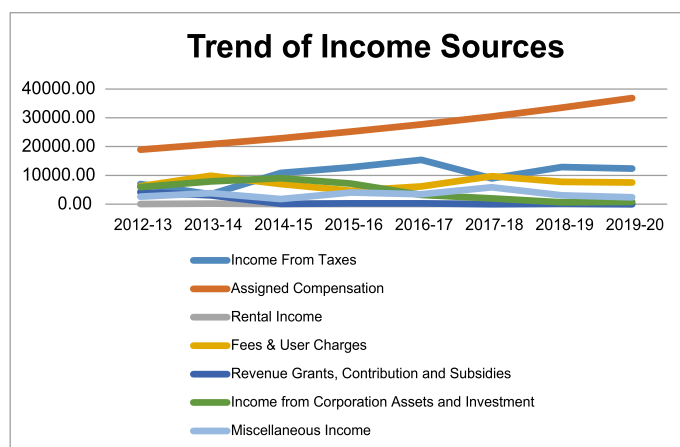
Figure1: Trend of Sources of Income

It is found that Assigned Compensation constitutes the largest portion of total revenue. Over the period of 8 years assign compensation has grown almost double of the value in the base year 2012-13. Assign compensation has shown continuous growth over the years as is visible by the line graph. Income from taxes which is the second largest portion of total revenue has also shown continuous growth over the years except in the year 2017 18 where at declined almost half of the previous year value. Income from taxes was highest in the year 2016-17 and lowest in the year 2013-14. Rental income of JMC has shown stagnant growth over the years. It was highest in the year 2017-18 and lowest in 2014-15. In the last year 2019-20, it is close to overall average value of 108.99.

Fees and User Charges also constitutes significant portion in total revenue securing third highest position. This income source has fluctuating growth over the years. It was lowest in

the year 2015-16 and highest in the year 2013-14. Year 2019-20 has shown the value close to eight-year average value. Revenue from Grants, Contribution and Subsidies is the insignificant portion of total revenue. Among all other sources income, it generates the lowest income. In the year 2017-18 and 2029-20 it has fetched nil income. Income from Corporation assets and investment has significantly declined over the years. It was

highest in the year 2014-15, till when it continuously decreased and thereafter it decreased continuously. Miscellaneous income showed fluctuating trend. No fixed pattern was observed for this source of income.

Table 2 presents the results of two-way ANOVA to find out whether year-wise income and source-wise income differ significantly.

Table 2: Results of Two-way ANOVA for Income from Various Sources over the Years

Source of Variation	SS	df	MS	F	P-value
Year	25468694.94	7	3638384.99	0.32	0.94
Sources of Income	4094773181.35	6	682462196.89	59.42	0.00
Error	482399006.99	42	11485690.64		
Total	**4602640883.28**	**55**			

Results of year-wise ANOVA test shows that the calculated F statistic is 0.32 with a p value of 0.94. Thus there is no significant difference in year-wise sources on income. In other words, income of different years is not significantly different from their respective mean values. On the other hand, source-wise ANOVA results revealed that the calculated value of F is 59.42 with a p value of 0.00. Thus null hypothesis is rejected and it can be concluded that there is significant difference among various sources of income of JMC.

Figure 2 shows the percentage share of various sources of income of JMC over the years. Assigned Compensation secured 41.98% of total income in 2012-13 which rose to 61.37% in 2019-20. This is only source of income which showed continuous increase. Incomes from taxes had 15.62% and 20.57% share in total income in 2012-13 and 2019-20

respectively. Together they both constitute 82% of total income of JMC (2019-20). Share of fees and user charges has decreased over the years. It was highest in 2013-14 and lowest in 2015-16.
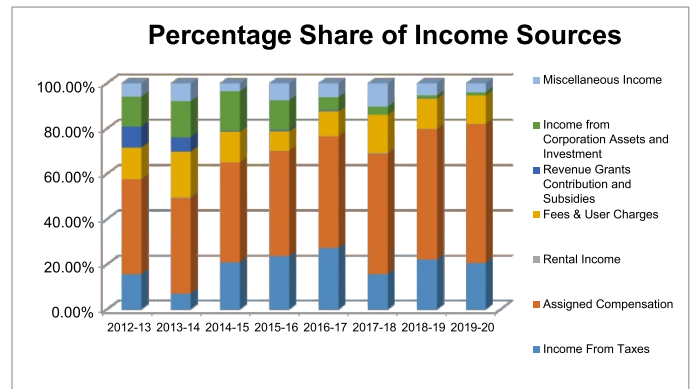
Figure 1: Percentage Share of Sources of Income

As discussed earlier, percentage share of Rental Income and Grants, Contribution and Subsidies is insignificant as it is less than 1% for most of the years. In the year 2019-20 percentage share of Grants, Contribution and Subsidies is nil. Income from Corporation Assets and Investment had 13.19% in 2012-13 which grew to 17.47% in 2014-15 but thereafter it declined drastically and reduced to only 1.38% in 2019-20. Miscellaneous

income had highest share i.e. 10.29% in 2017-18 and lowest in 2014-15 i.e. 3.51%. in 2019-20 it was close to the lowest value as it was 3.98%. Thus it shows that Assigned Compensation, Income from taxes and Fees and User Charges constitute the largest percentage of total revenue. Table 3 presents the results of one-way ANOVA for finding out whether percentage share of different sources of income differ significantly in different years.

Table 3: Results of One-way ANOVA for Year-wise Percentage Share of Income

Source of Variation	SS	df	MS	F	P-value
Between Groups	1.362956703	6	0.227159	95.31452	0.00
Within Groups	0.116779822	49	0.002383		
Total	**1.479736525**	**55**			

It is found from the results that the calculated value of F is 95.314 with a p value of 0.00. Thus null hypothesis is rejected at 5% level of significance and it can be concluded that percentage share of different sources of income is significantly different in different years. Figure 3 displays the year-on-year growth rate of various income sources of JMC.
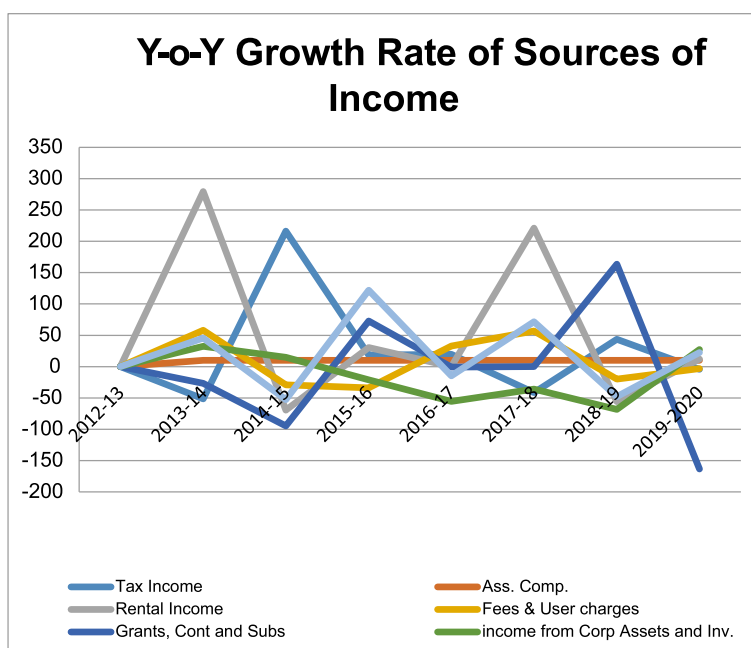
Figure 3: Year-on-Year Growth Rate of Sources of Income

Year 2012-13 has all values as 0, as it is the base year. Surprisingly Assigned Compensation has a straight line having 10 as constant growth rate. The highest fluctuations are observed in Tax Income. In the year 2014-15 and 2018-19 tax income had a growth rate of 216.12 and 43.76 respectively and in the year 2013-14 and 2017-18 it had a negative growth rate of 51.3 and 41.62 respectively. Fees and User Charges has moderately fluctuating growth rate and the same remains true for Income from Corporation Assets and Investments and Miscellaneous Income.

Table 4 shows the One-way ANOVA results for finding out whether growth rate of different sources of income is significantly different.

Table 3: Results of One-way ANOVA for Year-wise Percentage Share of Income

Source of Variation	SS	df	MS	F	P-value
Income Sources	1.36296	6	0.22716	81.69	0.00
Error	0.11678	42	0.00278		
Total	**1.47974**	**55**			

Table 4 reveals that the calculated value of F is 81.69 with a p value of 0.00. Thus null hypothesis is rejected at 5% level of significance and it can be concluded that there is significant difference in growth rates of different sources of income.

7. Findings and Suggestions

The data pertaining to revenue of Jaipur municipal corporation reflects the volatility in the trend over the years in each source except total revenue and assigned compensation, for which both the sources have reflected an increasing trend over the years. JMC's lowest income was from rent and revenue from grants and contribution and subsidies were very low. That is, there was not much improvement in the financial condition due to lack of government grants. JMC was not getting satisfactory revenue from any source. Overall JMC's financial position was in very poor condition. Also, there has been a significant difference in various sources of revenue, their percentage share and their growth rate over the years.

The preceding analysis of local governments' functions, finances and state control indicates that they have yet to function as autonomous government units in the true sense. The erosion of municipal domain from the encroachment by government agencies and special purpose authorities, reduction in their resource base by utilization of some of the legitimately local source of revenue, abolition of octroi, etc. For the matter of autonomy to local government., the state government displays reluctance while it creates clamour for its own autonomy by way of decentralization of powers, functions and functions that has led the central government to set up commission for taking measures against the problem of central-state relation and review state government incoherence. The growth of urbanization on an unprecedented scale has led to the massive avalanche of urban problems and calls for expertise to deal with it which can only be attracted and boosted if selected on merit, given salaries, avenues of promotion and merge the state cadres of municipal services in corresponding state cadres. Also, it requires proper urban town planning involving judicial use of land and proper financial management and control to provide funds and correction of factors like inability to impose taxes, underassessment etc. Thus, these trends don't display a shiny prospect for local government. At the national level, the task forces on urban management and financing of urban development constituted recently by the planning commission has been of the help by suggesting beneficial measures for enhancing the management capabilities of local governments to deal with arduous tests posed by urbanization. Thus, future prospects of urban local self-government depend upon the political will to act on suggestions.

8. Conclusion

The spectrum of urban local governments extends to the phenomenon of urbanization and its problem solving, planning, governance, legislation, financial administration and personnel management, reports of various commission, etc. The state governments exert supervision over urban government through legislative, administrative, financial and judicial control and should be in harmony to enhance the performance and standard of services. The state bureaucracy holds power in the administration of municipal corporation. The administrator acts as a deliberative and executive authority. Municipal commissioner is the kingpin of administration while Mayor just being the ceremonial head. Thus, it has been concluded with a notion that special purpose agencies are created to fulfill the expertise and inefficiency in obligatory functions by urban local government. Unions use agitational approach to get their demand accepted and winning political parties participate in urban local government by electing their own mayors and chairman of committees.

9. References

- Abedi, F. (2018). Significance of Urban Local Government: A Historical Perspective. International Journal of Research Culture Society, 2(3).

- Bandyopadhyay, S., & Sharma, A. (2020). Assessing the performance of Kolkata Municipal Corporation: Implications for service delivery.

- Dr. Rakesh Kumar Singh, S. D. (2022). Local Self Government Including Panchayat Administration. Hyderabad: Gogia Law Publications.

- http://www.jaipurmc.org/Jp_HomePagemain.aspx

- Kleynhans, E. P., & Coetzee, C. (2019). Assessment of financial conditions of South African Municipalities: A unique model for KwaZulu-Natal. Southern African Business Review, 23(1).

- Local government in India (n.d.) Retrieved from https://en.wikipedia.org/wiki/Local_government_in_India

- Local Self Government (n.d.). Retrieved from https://www.studocu.com/in/document/karnataka-state-law-university/constitutional-law/73rd-and-74th-converted/2061662

- Maheshwari, S. (1984). Local Government in India (Fifteenth ed.). Agra, Uttar Pradesh, India: Educational publishers, Agra, India.

- Mishra, G. J. (n.d.). Development and Functioning of Urban Local Self-Government and Rural local Self-Government in India. Retrieved from https://www.soumu.go.jp/main_content/000336345.pdf

- Myneni's, D. S. (2016). Local Self Government. Faridabad: Allahabad Law Agency.

- Nallathiga, R., & Campus, M. H. I. (2009). Analysing the finances of urban local bodies in India: A cross-sectional study. Centre for Good Governance, Hyderabad.

- Sejdini, M. (2014). Towards Establishing Financial and Budget Indicators for Municipalities: Theoretical Approach. European Journal of Social Science Education and Research, 1(1), 243-251.

- Turley, G., Robbins, G., & McNena, S. (2015). A framework to measure the financial performance of local governments. Local government studies, 41(3), 401-420.

- Urban local government bodies (n.d.) Retrieved from https://en.wikipedia.org/wiki/Local_government_in_India.

Ethical Positioning: Impact on Sales

Prof. Harsh Dwivedi *
Silki Khanna **

Abstract

This research has deeply investigated FMCG company's ethical conduct while using product, price, place & promotion for their marketing strategies to influence buyer's purchasing intension. The study also analyses and establishes the relationship between "consumer brand relationship quality" and ""Perceived product Quality"". Information was acquired from 261 customers across Rajasthan who were randomly approached about their opinion for FMCG companies' goods. Following that, the dataset was processed and analysed by IBM SPSS 28 software. In addition, the Smart PLS 3.30 software was utilised to assess hypothetical research model. These findings showed ethics related to 4P's of FMCG company positively impacts consumer's "Brand Loyalty" and purchase decision.

Keywords: Ethical Positioning, "Brand Loyalty", Buying behaviour, Purchase decision, SEM

1. Introduction

These phrases immoral and moral refer to a person's ethical judgement of righteousness and virtue.   Emotional sentiments can be benign or have a pro or con aspect relying on their structure. Corporate citizenship originates from the exchanges of commercial professionals with members of an organisation, clients, adversaries, & opposing sides, along with international perspective (Brunk, 2012). When compared identical products, todays modern consumers continue to desire relatively high commodities, yet they pick brands that are socially recognised, albeit at premium rates. Brand managers can embrace aggressive promotional processes to help them understand what to do when struck with an ethical problem. Ghezelsefloo et al., (2022) characterize ethical marketing as standards of conduct and ethics used in marketing strategies. According to some studies, a comprehensive review of how philosophical criteria are adapted to commercial decisions. Marketing is always riddled with institutional and social considerations. Appropriate promotional strategies comprise product-related morality, price-related moral standards, location-related integrity, & promotion-related morals (Papista & Dimitriadis, 2012).

The basic purpose of business marketing tactics is to cultivate consumer loyalty. Such commitment is often manifested as pleasant feelings toward the business in the consumer-brand connection as well as in brand attitude. The principal purpose is to stay ahead of the competition there in marketing framework. In today's fast-changing competitive landscape, forging strong ties and brand recognition with buyers is now becoming progressively important. According to certain study, corporations should establish their corporate identity & supply their products to the customer whilst also keeping social and environmental concerns in view. Customers are likely to buy stuff or services from firms that work on key problems (BRETCU, 2013). Establishing a trust and rapport as well as forming customer retention are essential considerations in today's marketing landscape (Melewar & Nguyen, 2014). In today's rapidly changing market, fundamental concerns are made significantly more complicated. Businesses, for instance, should indeed carry business ethically & professionally regarding their clients in contemporary era (Martin & Johnson, 2010; Olins, 2014). Entrepreneurs & salespeople have identified the ethical practices there in development of long-term commercial viability. (Brunk, 2012; Yamoah et al., 2016; De Pelsmacker & Janssens, 2007), Advancement of organizational ethics (Vickers, 2005), as well as general marketing challenges (for example, safety regulations, price, and advertising) (Murphy et al., 2007).

* Director, R.A. Poddar Institute of Management, FMS – University of Rajasthan, Jaipur (Raj.),
   harsh_dwivedi1@rediffmail.com
* * Research Scholar, (Corresponding Author), R.A. Poddar Institute of Management, FMS – University of Rajasthan, Jaipur (Raj.), India
      silks9999@gmail.com

Hardly a few researchers have examined at advertising model as merchandise, product cost, venue, & affirmation ethical considerations. Strategic perspective seems to have a significant effect on sales, emphasizing the significance of sensible business activities in terms of building rapport, brand knowledge, & strong brand commitment (e.g., purchase decision of customers and "Brand Loyalty").

2. Moral Advocacy in Strategic Marketing

Marketing has always been plagued with basic moral paradoxes. Ethical promotional activities encompass product-related values, price-related moral standards, location-related integrity, & promotion-related morals. Quality control, potential litigation, & brand duplication have all been legal ramifications of business ethics. Various researchers have investigated the marketing mix method from an ideological viewpoint. Two price-related professional ethics are the context criterion and indeed the impartiality norm. Price-related values must be identical to or comparable to the value gained by buyers. As per the terms of percentage theory, relative prices should be relevant to the degree or relevance of the benefit obtained from an item or brand. Entirely irrational pricing may enhance the competitive framework. Heterogeneous linkages within transmission lines are a key source of place-related principles. Businesses that contribute significantly in the flow of goods and services from manufacturers to distributors to retailers to consumers may lead to unethical conduct, such as overstepping their authority of dominance. Advertising & direct marketing could have been used to study concerns associated to advertising. Promotion-related morality includes ethical inquiries pertaining branding, direct marketing, & public affairs. An advert, as well as a sponsor or agency, may be engrossed in a moral conflict. Sales associates may endure ethical conundrums while engaging consumers. Additional examples incorporate conflicts with buyer, trader, and retailer promotional campaigns, as well as concerns with promotional affiliations with news sources. In context of this controversy, the subject should be evaluated in order to design a logical framework that shows the interaction between the marketing mix & ethics, as well as the bonding and indeed the implications of shopping habits.

3. "Brand Loyalty", "Perceived product Quality", & "Consumer-Brand relationship Quality"

The warmth, profundity, persistence, & significance of "consumer-brand relationship" are all characteristics of client-connection excellence. Aspects of "Consumer-Brand relationship Quality" encompass brand effectiveness, brand recognition, personal ties, brand equity, dependability, pleasure, & customer loyalty. Older versions of this type of linkage hypothesized a core network structure, like cognitive,

psychological, as well as behavioural. A plethora of steps are required for the creation & preservation of consumer-brand interactions. The shopping experience, emotional reaction, behavioral insight, understanding of brand, & purchase intention have all been crucial factors that influence the intensity of "consumer-brand connection". A consumer's exclusive emotional content with a brand is more comparable to a fan's enthusiasm for a sports star or a performer than just to love in a special relationship. In in order to strengthen the "consumer-brand relationship" and reaffirm a company's ethical character as well as professional dealings with customers, it is essential to focus on aspects that contribute to "Consumer-Brand relationship Quality." The degree of a "consumer-brand relationship" is governed by a framework wherein the buyers & corporations engage in and communicate with each other in the community as two equivalent entities.

4. Deemed quality of the Product

"Perceived Product Quality" has been defined in a diverse range of learning environments. "Perceived product Quality" alludes here to consumer's evaluation of a product's totality of features and characteristics, a particular piece of linkage, as well as the customer's perspective of the product's overall excellence or superiority. Consumer perceptions are independent from factual or empirical excellence, product-based reliability, & manufacturing quality. As per theories, "perceived product quality" seems to be the consumer's view of a product's entire features, that included effectiveness, characteristics, consistency, uniformity, purposeful creation, longevity, ease of maintenance, & appearances.

5. Evaluation of alternatives & Customer Loyalty

So the term "loyalty" is used in a broad range of circumstances, its interpretation differs based on the circumstance. Latest researches on loyalty often use a cognitive assessment, an ideological score, or a composite benchmark incorporating cognitive, ideological, & intellectual traits. Merely brand preference, including a stress here on effect of such behavior, may be utilized to quantify loyalty interpersonally. In accordance with the description of "Brand Loyalty," it is the potential of a consumer re - purchase a particular service or product or suggesting to others. it is asserted that customer loyalty originates in persistent buying behaviour. "Brand Loyalty" is defined by some researchers as "a strongly held dispositional commitment that causes consumers to reject situational pressures and marketing efforts that may have the potential to cause brand-switching behaviour." Affective and action loyalty are two types of "Brand Loyalty". Affective loyalty is the most accurate way to gauge "Brand Loyalty". "The consumer's desire and affection for a certain brand; nevertheless, the actual

purchasing action has not yet materialised," according to affective loyalty. Consumers' real buying activity for a certain brand demonstrates action loyalty." "Brand Loyalty", according to Oliver, is a vital component in increasing and achieving long-term company success. "Brand Loyalty" is acknowledged as among the most important organizational sustainability & performance measures. Establishing a key competitive strategy involves retaining satisfied consumers, that is now a core marketing strategy. Improved "Brand Loyalty" improves customers' buying choices. Buyers are more willing to purchase that brand's goods without reluctance since a sense of confidence has been generated.

Furthermore it describes how the marketing mix strategy from ethical problems reflects consumer product appraisal, product appearance, & "Brand Loyalty." The assumption, or focus, of this study is to analyze the aspects of the marketing mix from an ethical perspective, as well as their effect on "consumer-brand connection" & product attributes. Researchers also explore how "consumer-brand connection" &"perceived quality of the product" influence corporate "Brand Loyalty." Towards the conclusion of the paper, the implications both theoretical and practical of the results, as well as the study's limitations and forthcoming research aims, are addressed.

Objective

❖ To check impact of marketing mix related ethics on Consumer Brand Relationship Quality

❖ To check impact of marketing mix related ethics on "Perceived product Quality" of FMCG product

❖ To check impact of Consumer Brand Relationship Quality on consumer's "Brand Loyalty"

❖ To check impact of "Perceived product Quality" on "Brand Loyalty" of consumers

❖ To check impact of "Perceived product Quality" on consumer's Purchase Decision for FMCG products

❖ To check impact of Consumer's "Brand Loyalty" on their Purchase Decision for FMCG products.

Hypotheses:

• Ha1: "Product related ethics/ Price related ethics/ Place related ethics/ Promotion related ethics of FMCG company positively impacts Consumer Brand Relationship Quality"

• Ha2: "Product related ethics/ Price related ethics/ Place related ethics/ Promotion related ethics of FMCG company positively impacts Perceived product Quality of FMCG product"

• Ha3: "Consumer Brand Relationship Quality has positive impact upon consumer's Brand Loyalty"

• Ha4: "Perceived product Quality of FMCG products has positive impact upon "Brand Loyalty" of consumers"

• Ha5: "Perceived product Quality of FMCG products positively impacts consumer's Purchase Decision for FMCG products"

• Ha6: "Consumer's Brand Loyalty positively impacts their Purchase Decision for FMCG products"

6. Methods and Procedures

This particular research work is solely based on primary data. A standard questionnaire was prepared to survey the customers of FMCG products. The questionnaire contains 5 question related to demographic profile of respondents and 24 Likert scale-based (5-point) questions related to selected constructs used in the PLS-SEM model. After validation of questionnaire, it was distributed amongst 352 customers across various FMCG retail stores of Jaipur and after filtering & sorting 261 valid responses were received. After that, data is analyzed using IMB SPSS v 26 and Smart PLS 3.30 software.

More than 20 years ago (during 1960 to 1980) concept of PLS - SEM was introduced. Herman Wold initiated it and his crew then advanced it. Herman began by developing a collection of techniques for dealing with relapse difficulties of least-squares (Lohmöller, 2013). Several applications of the PLS approach were used in economics, social sciences, and subsequently science throughout 1980s, that had significant recognition among renowned scholars (Vinzi et al., 2010).
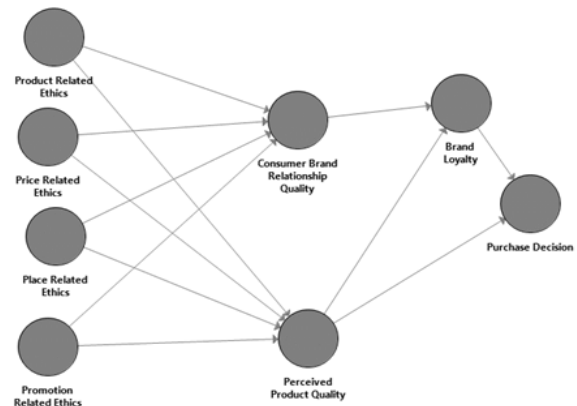
Figure 1: (Lee & Jin, 2019), (Pham & Ngo, 2017), (Azzari & Pelissari, 2021) and Eslami, (2020)

7. Results & Discussions:

Data shown in table 1 contains respondent's demographic profile. More than half of consumers were male (60.91%). Respondents who come under 26-35 age (30.4%) category were majority in number. Most of them were graduate (44.44%). Most of the participants were Pvt. employees (41.76%). Majority of respondents had annual income in between 2 lakhs to 4 lakhs (44.83%).

Table 1: Demographic Profiles

Demographic Profile of Respondent		Frequency	Percent (%)
Genderz	Male	159	60.92
	Female	102	39.08
Age	Below 25	39	14.94
	26-35	82	31.42
	36-45	44	16.86
	46-55	55	21.07
	56 & above	41	15.71
Education	Undergraduate	22	8.43
	Graduate	116	44.44
	Post Graduate	86	32.95
	Other	37	14.18
Profession	Student	15	5.75
	Business	80	30.65
	Gov. Employee	55	21.07
	Pvt. Employee	109	41.76
	Retired	2	0.77
Annual household income	less than 2 lakhs	27	10.34
	2 lakhs - 4 lakhs	117	44.83
	4 lakhs above – 6 lakhs	88	33.72
	6 lakhs above- 8 lakhs	15	5.75
	More than 8 lakhs	14	5.36
	Total	261	100

(Source: IBM SPSS 26.0 Output)

Measurement model:

In generally measurement models are used in assessing validity & reliability of constructs (Sarstedt et al., 2016). Latent variable's internal consistency is usually measured by using "Cronbach's Alpha" and "Composite Reliability". The value of Cronbach's Alpha for each construct shown in Table 2 is observed greater than 0.7; therefore, these constructs meet the criterion of internal consistency (Hair Jr et al., 2021). Apart from it, obtained values of rho_A and Composite Reliability for each latent variable are more than 0.7 and respectively values of AVE are more than 0.5 which fulfills criterion of convergence validity (Leguina, 2015).

Through employing both "Fornell-Larcker Criterion" & "Heterotrait-Monotrait Ratio (HTMT)", discriminant validity is assessed for constructs. Since sq. root of AVE for every construct (displayed in Table 3) are greater than that construct's correlation with the other ones (Fornell & Larcker, 1981), the discriminate validity criteria. On the other side, HTMT is used to check external consistency of constructs (Henseler, Hubona, et al., 2016) which is helpful in overcoming inadequacy in cross loadings & Fornell-Larcker Criterion (Henseler, Ringle, et al., 2016). The permissible value for HTMT is anything less than 1 (Henseler, Hubona, et al., 2016). Since, all values (shown in Table 4) are found less than threshold value, all constructs are valid enough to meet criteria of suitability.

Table 2: Validity and Reliability

	"Cronbach's Alpha"	"rho_A"	"Composite Reliability"	"Average Variance Extracted (AVE)"
BL	0.7794	0.7850	0.8712	0.6928
CBRQ	0.7392	0.7515	0.8521	0.6588
PD	0.8289	0.8294	0.8976	0.7451
PQ	0.7719	0.7867	0.8676	0.6866
Place Related Ethics	0.7960	0.7989	0.8805	0.7111
Price Related Ethics	0.8144	0.8151	0.8899	0.7294
Product Related Ethics	0.7027	0.7277	0.8316	0.6231
Promotion Related Ethics	0.7971	0.8044	0.8810	0.7121

(Source: Smart PLS 3.3 Output)

Table 3: Fornell-Larcker Criterion

	BL	CBRQ	PD	PQ	"Place Related Ethics"	"Price Related Ethics"	"Product Related Ethics"	"Promotion Related Ethics"
BL	0.8324							
CBRQ	0.6724	0.8516						
PD	0.3957	0.3375	0.8632					
PQ	0.6721	0.8169	0.3822	0.8286				
"Place Related Ethics"	0.2091	0.1325	0.2396	0.1993	0.8432			
"Price Related Ethics"	0.7666	0.7487	0.3758	0.7098	0.0952	0.8541		
"Product Related Ethics"	0.5478	0.6320	0.2049	0.6204	0.1100	0.6102	0.7894	
"Promotion Related Ethics"	0.8200	0.6730	0.3041	0.7014	0.0907	0.7081	0.5685	0.8438

(Source: Smart PLS 3.3 Output)

Table 4: Heterotrait-Monotrait Ratio (HTMT)

	BL	CBRQ	PD	PQ	"Place Related Ethics"	"Price Related Ethics"	"Product Related Ethics"	"Promotion Related Ethics"
BL								
CBRQ	0.8681							
PD	0.4892	0.4289						
PQ	0.8542	0.6194	0.4754					
"Place Related Ethics"	0.2627	0.1720	0.2940	0.2576				
"Price Related Ethics"	0.8515	0.8639	0.4543	0.8859	0.1264			
"Product Related Ethics"	0.7201	0.8594	0.2657	0.8082	0.1551	0.7960		
"Promotion Related Ethics"	0.4377	0.8698	0.3733	0.8872	0.1147	0.8811	0.7586	

(Source: Smart PLS 3.3 Output)

Assessment of Structural Model:

In order to achieve final results of hypothesis assessment of structural model is needed after assessment of PLS algorithm. In order to validate connection amongst constructs path coefficient are often used. Simply partial least square (PLS) is a regression model in a form of path model that is capable of managing number of dependent variables with one/more dependent variables (Götz et al., 2010). For this present study, result shown in Table 5 is retrieved by bootstrapping (considering 5000 sub-samples).

Only for the impact of Place related ethics of FMCG company on Consumer Brand Relationship Quality is found insignificant since the p value (0.2467) is found greater than 0.05 and t statistics value (1.1597) is found greater than 1.96 (Streukens & Leroi-Werelds, 2016). Results of all remaining hypothesis (shown in Table 5) are accepted since p value for all are found significant and all t statistics values are more than threshold range of 1.96.

Ringle et al., (2012) have described values of R2 as any model's capacity to predict & explain endogenous latent variables which should lie in between 0 to 1. Higher value of R2 would be the capacity of model would be higher accordingly in predicting as

well as in explaining latent variables. Data shown in Table 6 and Figure 2 reveals, "Product related ethics, Price related ethics, Place related ethics and Place related ethics" of FMCG company explains 62% of "Perceived product Quality" (PQ) of its products. Whereas, "Product related ethics, Price related ethics and Place related ethics" of FMCG company altogether are capable of explaining 62.9% of Consumer Brand Relationship Quality (CBRQ). Lee & Jin, (2019) had developed such hypnotized models and has proven existence of such relationships in the outcomes.

Accordingly, "Consumer Brand Relationship Quality (CBRQ)" & ""Perceived product Quality" (PQ)" of FMCG company have 48.3% impact upon consumer's "Brand Loyalty" (BL). Furthermore, "Perceived product Quality" (PQ) of FMCG company as well as consumer's "Brand Loyalty" (BL) are altogether impacting consumer's purchasing decision (PD) by 17.5% (Joe F Hair Jr et al., 2017). Pham & Ngo, (2017) and Azzari & Pelissari, (2021) have established that "Brand Loyalty" and perceived quality of smartphone affects the purchase decision of customers, in the outcome of their research paper. Eslami, (2020) has exhibited similar kind of outcome for Iran's health insurance consumers.

Table 5: Relationship amongst constructs

	"Original Sample (O)"	"Sample Mean (M)"	"Standard Deviation (STDEV)"	"T Statistics (|O/STDEV|)"	"P Values"
BL -> PD	0.2531	0.2531	0.0704	3.5970	0.0004
CBRQ -> BL	0.3632	0.3535	0.1252	2.8999	0.0039
PQ -> BL	0.3609	0.3682	0.1254	2.8770	0.0042
PQ -> PD	0.2121	0.2101	0.0666	3.1860	0.0015
Place Related Ethics (PRE_1) -> CBRQ	0.0447	0.0468	0.0385	1.1597	0.2467
Place Related Ethics (PRE_1) -> PQ	0.1137	0.1166	0.0450	2.5277	0.0118
Price Related Ethics (PRE_2) -> CBRQ	0.4486	0.4407	0.0728	6.1605	0.0000
Price Related Ethics (PRE_2) -> PQ	0.3303	0.3227	0.0663	4.9796	0.0000
Product Related Ethics (PRE_3) -> CBRQ	0.2270	0.2302	0.0587	3.8687	0.0001
Product Related Ethics (PRE_3)-> PQ	0.2162	0.2219	0.0532	4.0662	0.0001
Promotion Related Ethics (PRE_4) -> CBRQ	0.2223	0.2248	0.0765	2.9055	0.0038
Promotion Related Ethics (PRE_4) -> PQ	0.3343	0.3381	0.0678	4.9281	0.0000

(Source: Smart PLS 3.3 Output)

Table 6: R^2 values

	R Square	R Square Adjusted
BL	0.4867	0.4827
CBRQ	0.6349	0.6292
PD	0.1812	0.1749
PQ	0.6257	0.6199

(Source: Smart PLS 3.3 Output)
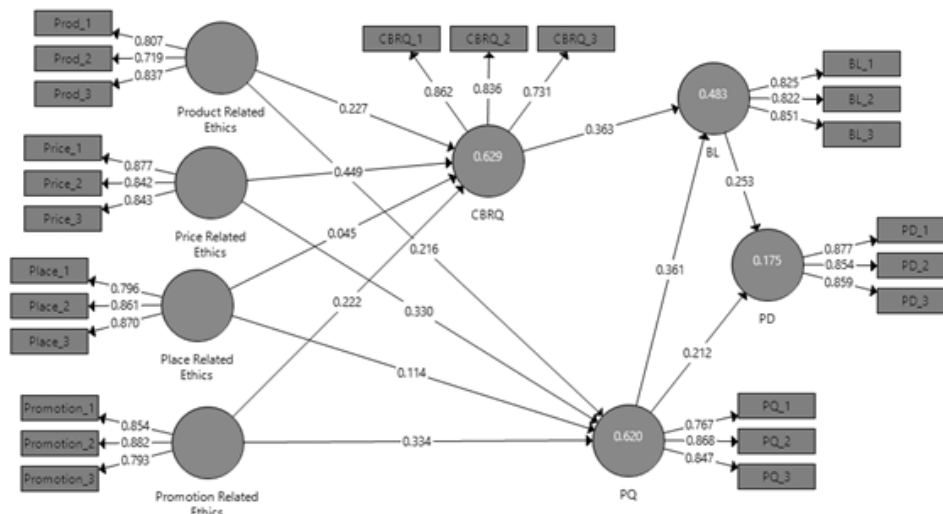
Figure 2: SEM model

Model Fit:

The Chi-square (524.751) is found significant at 5% level of significance (p value, 0.00), according to the data displayed in Table 7. The proposed research model's approximation model fit is measured using SRMR (standardized root mean square residual). A model is considered to have an adequate fitness of model whenever "SRMR" is < 0.08 (Hu & Bentler, 1998). Value of SRMR =0.0735< 0.8 (shown in Table 7). Therefore, the proposed model is suitable for analysis of data.

Table 7: Fitness test of proposed model

	Saturated Model (SM)
Chi-Square	524.751
d_G	0.6214
d_ULS	0.6197
NFI	0.881
SRMR	0.0735

(Source: Smart PLS 3.3 Output)

When exploring elements that impact mutual transactional relationships in FMCG, current research investigates mediating effects of "consumer-brand connection" & "Perceived product Quality". These elements have a substantial impact on "Brand Loyalty". We discovered a strong link amongst ethical conduct of marketing constituting basis of businesses, & value of associations. It is indicated that "consumer-brand connection" & "Perceived product Quality" mediate the impact of product ethics on "Brand Loyalty". That is, businesses should take an emotional orientation whilst interacting with clients as key of their readiness for the imminent industrial revolution. To thrive in this modern generation, businesses should strengthen their brand portfolio not only by providing increased security, durability, and environmental responsibility, in addition to reframing the function of sales force.

Pricing ethics should be handled from a different angle as well when a corporation proves this argument in terms of the consumer-brand connection and "Perceived product Quality". If it pertains to the link between "pricing-related ethics" and "Brand Loyalty," brand buyers generally seek a product that is less expensive than what competitive customers might pay. "Brand Loyalty" is likely to be impacted if a vendor fails to

provide relative prices by conforming to reasonable "pricing-related ethics". " Pricing-related ethics" showed no significant influence on "Brand Loyalty," demonstrating that it is impossible to forecast until pricing-related ethics are strengthened. Additionally, a strong relation has been shown between pricing-related ethics & "consumer-brand relationship". In other words, strengthening price ethics strengthens the consumer-brand connect. Conversely, no meaningful connection was found among "pricing-related ethics" & "Perceived Product Quality," demonstrating that adopting pricing-related ethics will have a minimal impact on product product attributes. Researchers also identified that, as mediators, a corporation's place-related ethics enhanced "Brand Loyalty" & "Perceived Product Quality." Additionally, researchers uncovered no significant causal connection amongst "place-related ethics" & performance, demonstrating that when "place-related ethics" are reaffirmed, a firm's "consumer-brand relationship" and "Perceived Product Quality" suffers. The appearance of a business, particularly pricing ethics, have been discovered to have a direct influence on "Brand Loyalty." That is, "Brand Loyalty" increases when a company's "place-related ethics" are excellent. "Place-related ethics" was found to have a significant impact on both the "consumption connection" and "Perceived Product Quality." Building "Brand Loyalty" & "Perceived Product Quality" thru "consumer-brand connection" has an adverse effect on a company's "place-related ethics". While reviewing a business's reputation, consumers typically address things like "location-related ethics" like acting ethically following principles with "honest distribution methods & personalised distribution". According to this study, promoting "place-related ethics" may strengthen the "consumer-brand connection" as well as quality of products. "Promotion-related ethics" were noticed to have a significant influence on "Brand Loyalty." When "promotion-related ethics" are intense, customers have a higher likelihood to initiate gainful "Brand Loyalty." As a consequence of enhanced advertising morality, consumer-brand relationships & "Perceived Product Quality" have both managed to improve. " Promotional ethics" influence "Brand Loyalty" via the mediating effects of "consumer-brand connection" &"Perceived Product Quality." This study evidenced the generally held belief that they endowed unique features. Researchers acknowledged that ethical marketing efforts ("product-, pricing-, place-, and promotion-related ethics") affect "Brand Loyalty" thru mediators of "consumer-brand connection" & "Perceived product Quality." Promotional ethics are extremely crucial in establishing strong relationships with customers in aspects of both the "consumer-brand connection" & quality of products. Issues that aim to examine "promotion-related ethics" include the conglomerate offering deliberately misleading & overstated sales promotion or false facts, actually trying to facilitate exchanges through extortion, & expending coercive sales

pressure. In other words, a link with the business can be intensified if the business that provides the merchandise is an authentic corporation that refrains from misuses its position in the marketplace. The ultimate focus here is that commercial enterprises only can succeed there in midst of intense competition if they inculcate an ethical mind-set that promotes reasonable & trust-based exchanges with purpose of forming strategic partnerships. Branding is already becoming growingly essential as a result of stiff competition and the urge to stand out. Hence, a buyer's understanding of a vendor shapes both provider's brand image as well as the value of relational exchanges. Moreover, it was realised that certain appropriate ethical factors have a major impact on consensual relationship appraisal & servicing. The findings of this study have a massive effect on FMCG companies' promotional activities (e.g., marketing mix action plan). In a context of an organization where competitive rivalry is expanding & operational convergence is hard to achieve, researchers give insight on how buyers start generating progressive attitudes & illustrations to yield long-term benefits for corporations. The results have major implications for efficient advertising approaches as well as ethical marketing materials.

8. References

- Agnihotri, R., & Krush, M. T. (2015). Salesperson empathy, ethical behaviors, and sales performance: the moderating role of trust in one's manager. Journal of Personal Selling & Sales Management, 35(2), 164-174.

- Azzari, V., & Pelissari, A. (2021). Does brand awareness influences purchase intention? The mediation role of brand equity dimensions. BBR. Brazilian Business Review, 17, 669-685.

- Baltas, G., Doyle, P., & Dyson, P. (1997). A model of consumer choice for national vs private label brands. Journal of the Operational Research Society, 48(10), 988-995.

- Baltas, G., Doyle, P., & Dyson, P. (1997). A model of consumer choice for national vs private label brands. Journal of the Operational Research Society, 48(10), 988–995.

- Chen, M. F., & Mau, L. H. (2009). The impacts of ethical sales behaviour on customer loyalty in the life insurance industry. The Service Industries Journal, 29(1), 59-74.

- Chen, M.-F., & Mau, L.-H. (2009). The impacts of ethical sales behaviour on customer loyalty in the life insurance industry. The Service Industries Journal, 29(1), 59–74.

- Crowe, R., & Simon, W. (2000). Who are the ethical consumers? Citeseer.

- Crowe, R., & Simon, W. (2000). Who are the ethical consumers? (pp. 1-44). Manchester: Cooperative Bank.

- *Davies, I. A., Doherty, B., & Knox, S. (2010). The rise and stall of a fair trade pioneer: The Cafédirect story. Journal of Business Ethics, 92(1), 127-147.*

- *Davies, I. A., Doherty, B., & Knox, S. (2010). The rise and stall of a fair trade pioneer: The Cafédirect story. Journal of Business Ethics, 92(1), 127–147.*

- *Dawson, L. M. (1997). Ethical differences between men and women in the sales profession. Journal of Business Ethics, 16(11), 1143-1152.*

- *Dawson, L. M. (1997). Ethical differences between men and women in the sales profession. Journal of Business Ethics, 16(11), 1143–1152.*

- *Eslami, S. (2020). The effect of brand experience on brand equity and brand loyalty through the mediating role of brand awareness, brand image and perceived quality. Archives of Pharmacy Practice, 11(1), 98-104.*

- *Ferrell, O. C., Ingram, T. N., & LaForge, R. W. (2000). Initiating structure for legal and ethical decisions in a global sales organization. Industrial Marketing Management, 29(6), 555-564.*

- *Ferrell, O. C., Ingram, T. N., & LaForge, R. W. (2000). Initiating structure for legal and ethical decisions in a global sales organization. Industrial Marketing Management, 29(6), 555–564.*

- *Gera, N., Bajaj, R., & Mishra, N. K. (2016). A comparative study on the growth prospects of private label brands to that of national brands in FMCG retail in Delhi with special reference to ATTA. International Journal of Applied Business and Economic Research, 14(6), 4419-4442.*

- *Gera, N., Bajaj, R., & Mishra, N. K. (2016). A comparative study on the growth prospects of private label brands to that of national brands in FMCG retail in Delhi with special reference to Atta. IJABER.*

- *Greenfield, A. C., Norman, C. S., & Wier, B. (2008). The effect of ethical orientation and professional commitment on earnings management behavior. Journal of Business Ethics, 83(3), 419-434.*

- *Hazrati, S. S., Zohdi, M., Zohdi, M. H., Seyedi, S. M., & Dalv, M. R. (2012). Examining impacts of the salespersons ethical behavior on the customers satisfaction, trust and commitment. African Journal of Business Management, 6(14), 5026-5033.*

- *Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. Psychological methods, 3(4), 424.*

- *Lee, J. Y., & Jin, C. H. (2019). The role of ethical marketing*

- *issues in consumer-brand relationship. Sustainability, 11(23), 6536.*

- *Martin, C. J., Upham, P., & Klapper, R. (2017). Democratising platform governance in the sharing economy: An analytical framework and initial empirical insights. Journal of Cleaner Production, 166, 1395-1406.*

- *Martin, C. J., Upham, P., & Klapper, R. (2017). Democratising platform governance in the sharing economy: An analytical framework and initial empirical insights. Journal of Cleaner Production, 166, 1395–1406.*

- *Materstvedt, L. J., Clark, D., Ellershaw, J., Førde, R., Gravgaard, A. M. B., Müller-Busch, H. C., ... & Rapin, C. H. (2003). Euthanasia and physician-assisted suicide: a view from an EAPC Ethics Task Force. Palliative medicine, 17(2), 97-101.*

- *Materstvedt, L. J., Clark, D., Ellershaw, J., Førde, R., Gravgaard, A.-M. B., Müller-Busch, H. C., i Sales, J. P., & Rapin, C.-H. (2003). Euthanasia and physician-assisted suicide: a view from an EAPC Ethics Task Force. Palliative Medicine, 17(2), 97–101.*

- *McClaren, N. (2015). The methodology in empirical sales ethics research: 1980–2010. Journal of business ethics, 127(1), 121-147.*

- *McGowan, M. K., Stephens, P., & Gruber, D. (2007). An exploration of the ideologies of software intellectual property: The impact on ethical decision making. Journal of Business Ethics, 73(4), 409-424.*

- *McGowan, M. K., Stephens, P., & Gruber, D. (2007). An exploration of the ideologies of software intellectual property: The impact on ethical decision making. Journal of Business Ethics, 73(4), 409–424.*

- *Mulki, J. P., & Jaramillo, F. (2011). Ethical reputation and value received: customer perceptions. International Journal of Bank Marketing.*

- *Mulki, J. P., Jaramillo, J. F., & Locander, W. B. (2008). Effect of ethical climate on turnover intention: Linking attitudinal-and stress theory. Journal of Business Ethics, 78(4), 559-574.*

- *Mulki, J. P., Jaramillo, J. F., & Locander, W. B. (2009). Critical role of leadership on ethical climate and salesperson behaviors. Journal of Business Ethics, 86(2), 125-141.*

- *Pham, T. M. L., & Ngo, T. T. (2017). The effect of electronic word-of mouth on brand image, perceived value and purchase intention of the smartphone's consumer. The 11th International Days of Statistics and Economics.*

- *Ravindran, D., & Venkatesakumar, R. (2017). Retail Preference of Promotion in Cashless Economy-FMCG*

Products. *Shanlax International Journal of Commerce, 1,* 457-462.

- Ravindran, D., & Venkatesakumar, R. (2017). Retail Preference of Promotion in Cashless Economy-FMCG Products. *Shanlax International Journal of Commerce, 1,* 457–462.

- Sagar, M., Khandelwal, R., Mittal, A., & Singh, D. (2011). Ethical Positioning Index (EPI): an innovative tool for differential brand positioning. *Corporate Communications: An International Journal.*

- Sagar, M., Khandelwal, R., Mittal, A., & Singh, D. (2011). Ethical Positioning Index (EPI): an innovative tool for differential brand positioning. *Corporate Communications: An International Journal.*

- Shaikh, R. A. (n.d.). *A FOCUSED REVIEW OF LITERATURE ON FMCG MARKETING IN RURAL AND URBAN MARKETS.*

- Sinha, S. K., & Verma, P. (2020). Impact of sales Promotion's benefits on perceived value: Does product category moderate the results? *Journal of Retailing and Consumer Services, 52,* 101887.

- Sinha, S. K., & Verma, P. (2020). Impact of sales promotion's benefits on perceived value: does product category moderate the results?. *Journal of Retailing and Consumer Services, 52,* 101887.

- Stros, M., Heinze, T., \vR\'\iha, D., Möslein-Tröppner, B., \vR\'\ihová, E., & Lim, L. L. K. (2020). Salesperson authenticity and gender-based perceptions: an international study. *Journal of Eastern European and Central Asian Research (JEECAR), 7(1),* 137–149.

- Stros, M., Heinze, T., Říha, D., Möslein-Tröppner, B., Říhová, E., & Lim, L. L. (2020). Salesperson authenticity and gender-based perceptions: an international study. *Journal of Eastern European and Central Asian Research (JEECAR), 7(1),* 137-149.

- Valentine, S. R., & Bateman, C. R. (2011). The impact of ethical ideologies, moral intensity, and social context on sales-based ethical reasoning. *Journal of Business Ethics, 102(1),* 155-168.

- Valentine, S. R., & Bateman, C. R. (2011). The impact of ethical ideologies, moral intensity, and social context on sales-based ethical reasoning. *Journal of Business Ethics, 102(1),* 155–168.

- Weeks, W. A., Loe, T. W., Chonko, L. B., & Wakefield, K. (2004). The effect of perceived ethical climate on the search for sales force excellence. *Journal of personal selling & sales management, 24(3),* 199-214.

- Weeks, W. A., Loe, T. W., Chonko, L. B., Martinez, C. R., & Wakefield, K. (2006). Cognitive moral development and the impact of perceived organizational ethical climate on the search for sales force excellence: A cross-cultural study. *Journal of personal selling & sales management, 26(2),* 205-217.

Risk and Reliability Assessment Factors of Failure of Smoke Control Systems in the Buildings

Kuldeep Kumar *
Dr. (Prof) Virendra Kumar Paul **

Abstract

During building fires, the most lethal factor affecting the occupants is the spread of smoke and toxic gases in the compartment, adjacent spaces, evacuation routes, and locations that are remote from fire origin threatening life and damage to the property of the facility. Smoke and heat control in building fires is a major challenge for the egress of occupants as well as the fire-fighting operations. Life and fire safety in and outside the building must also be analyzed in order to limit the spread of fire and control the spread of smoke thereby, offering adequate time and structural stability for the evacuation process as well as firefighting operations. This paper focuses on the identification of factors affecting the risk and reliability assessment of the smoke control and exhaust systems in the buildings in an event of a fire.

Keywords: *Risk assessment; Reliability, Smoke Exhaust, Smoke Management, Risk Factors*

1. Introduction / Background

As a primary requirement of all fire safety codes, the provision of smoke control systems (including exhaust and ventilation systems) is required wherein the evacuation process of egress may take a substantial amount of time or involves the potential of hazard (greater than normal) such as for basements, high-rise buildings, etc. In addition, smoke control systems play an important role in building with large volume multi-story spaces like malls, atriums, or theatres. In such buildings, the high ceilings may lead to the lack of effectiveness of sprinkler operation to control or dowse a fire (Paul, et al., 2021).

Also, smoke control systems are invariably complex in their design and contain components such as the building's HVAC system, electrical equipment, fire alarm system, architectural components (e.g., operable doors), etc. Hence, the involvement of numerous components and their interlinkages may lead to many potential failure points which can cause the overall system to fail to operate and perform suitably due to the lack of monitoring and control of the component, commissioning procedures, automatic self-testing, or periodic testing and maintenance as per the requirements and condition of the system and its components.

This study outlines the following overarching principles of fire safety during the design, construction as well as in use phase of the buildings (IFSS, 2020):

a)   Prevention – Safeguarding against the outbreak of fire and/or limiting its effects.

b)   Detection and Communication – Investigating and discovering of fire followed by informing occupants and the fire service.

c)   Occupant Protection – Facilitating occupant avoidance of and escape from the effects of fire.

d)   Containment – Limiting fire and all its consequences to as small an area as possible.

e)   Extinguishment – Suppressing fire and protecting surrounding

The above-mentioned principles are relevant to all building typologies and regions as well as nations regardless of the differing political, economic, social, technological, legal, or environmental differences between jurisdictions

* Ph.D. Scholar, (Department of Building Engineering and Management, School of Planning and Architecture, New Delhi)
   kuldeep.phd259bem20@spa.ac.in
** Professor, (Department of Building Engineering and Management, School of Planning and Architecture, New Delhi)
    Vk.paul@spa.ac.in

2. Research Methodology

The research methodology adopted for this study includes the following steps:

Step 1: Desk Research – collating and collecting the relevant literature on risk and reliability assessment of the failure of smoke control systems in the building.

Step 2: Identification of Risk and Reliability assessment factors – from the exhaustive literature review and fire incidents

Step 3: Establishment of the criticality of factors – through survey and expert opinion and ranking through the Relative Importance Index (RII) method

Step 4: Recommendation and mitigation strategies

3. Risk and Reliability assessment at the Design Phase

It is utmost essential to take appropriate steps must be taken during the design stage as well as coordination between the design and construction stage. This also includes the late changes in design that are not feasible during the construction stage which may impact the intended performance of the designed smoke and heat control systems. It is imperative that the buildings should be designed to offer an adequate level of fire safety and minimize the risks from heat and smoke. The key objective is to reduce to the potential for death or injury to the occupants of the building as well as firefighters involved in the rescue operations during building fires

Depending upon the complexity of the project, the concept design for smoke and heat control and ventilation systems are generally conceived and finalized several years prior to the final occupancy of the building. In addition, the performance criteria are frozen / established in the design phase that enables other disciplines to work towards providing integrated design conforming to these performance criteria. Hence, a proper and effective coordination among the stake holders, especially the design team is crucial so as ensure that any design change do not impact the design and intended performance smoke control system during the occupancy stage.

4. Risk assessment at Operational Phase of the building

While the building is the in-use or operational phase it is vital to analyze and assess the performance of the system to be analyzed or assessed. The smoke control systems installed in a building plays an important role in life and fire safety of the occupants from the fire risks, especially pertaining to the smoke and heat spread in the building from the fire origin through various compartments impacting and imposing hazards the occupants as well as the property. Typically, the smoke control systems rely on an exhaust or natural/ mechanical system to operate when a fire is detected.

It is imperative to note that the smoke control systems are designed and implemented in the buildings to limit or prevent smoke spread along with maintaining the tenable conditions and to assist with post fire operations.

The smoke generated during the building fires mainly consists of soot, hot gases, and other products of combustion. During the fire, the smoke has tendency to move through the ventilation systems through normal air flows/streams like the stack effect, and through buoyancy created by the temperature difference between hot gases and ambient air.

5. Relevant Codal Provisions in NBC

The National Building Code of India (NBC, 2016), also recognizes the guidelines for fire drill and evacuation procedures for high-rise buildings in annexure D-9.7 wherein there is a mention of periodic formal inspections of each floor area, including exit facilities, fire extinguishers, and the monthly testing of communication and alarm systems. Besides, annexure E-7 of NBC 2016 also highlights having a fire and life safety audit for all buildings with heights more than 15 m. Such audits should preferably be conducted by a third-party agency with relevant experience. Also, the frequency of such audits is recommended as once in two years (NBC, 2016). Also, annexure G-5.4 in the commercial kitchens mentions about inspection of sprinklers at least twice a year and cleaned due to the probability of coating of grease on sprinklers in such areas.

It is pertinent to note that these guidelines or provisions aim only at fulfilling the basic minimum requirement mainly for high-rise buildings, wherein there is no mention of any detailed audit or inspection process which is to be carried out for life and fire safety systems. The problems and risks due to failure of smoke control systems may not be limited to the premises of smoke spread only, but this can definitely create a cascading effect leading to other associated problems as well such as egress issues, visibility problems, façade fires, etc.

6. Identification of Risk and Reliability Assessment Factors

An exhaustive and in-depth literature review has been carried out, wherein various relevant published and non-published articles and journals were studied to identify the key risk factors and their associated reliability issues pertaining to the failure of smoke control systems in the building in case of a fire emergency. The identified factors are listed below:

1. Exhaust systems

2. Natural Ventilation

3. Smoke barriers (Smoke / water curtains)

4. Dampers

5. Pressurization

6. Stack effect

7. piston effect (in lift/elevator shafts)

8. evacuation effect – loss of effective pressurization

9. Airflow (efficiency for dilution and purging) - Inlet and exhaust point locations (adequacy and efficiency)

10. Fire-rated Fans (fire rating, capacity-CFD, speed, etc.)

11. Duct insulation

12. Smoke reservoir (provision and size)

13. Compartment components – fire doors, leakages, openings

14. Wind effect (including the design considerations for wind)

15. Awareness and training of staff and good practices

It is imperative to note that the above factors play an important role in controlling or reducing the spread of smoke in different areas of the building including the control of fire ignition and development in the early stage, control of flame spread, control of smoke and toxic, facilitate of means to allow occupants avoidance and provision of sufficient structural stability.

Further, the reliability of an installed smoke control system is a function of the above-mentioned factors along with the relative simplicity (effortlessness) of the system including the frequency of maintenance and testing performed on the system. In addition, (Ferreira, 2016), in his study revealed that the problem of reliability of smoke control systems is often identified at the point where additions/alterations are made to the building spaces, wherein re-investigation of the systems has been done and found that:

- the system "never operated properly" or "no one really understood how it functioned" and the system was disconnected at some point;

- it was found to be improperly working due to a loss of function of one or more critical components; or

- it was found to be operating, but the operation of the system either fails to meet the intended design criteria or exceeds those criteria in such a way as to create an unsafe condition in the building, typically by creating unacceptably high door-opening forces (Ferreira, 2016).

7. Criticality of the factors

The criticality of factors pertaining to the risk and reliability assessment of the smoke exhaust and control systems has been established through a survey. The survey was conducted through the rating system with the aim to gather expert opinions regarding the importance in terms of the probability (i.e. leading to risk) of failure of each factor. The rating system was comprised of the Likert scale (from 1 to 5), where: 1-Low probability, 3 – Medium/ average probability, and 5 – Very High probability of the failure of a particular factor.

The respondents for this survey include various industry experts with relevant experience in fire and life safety, including fire safety officers and engineering, design consultants, facility managers, and experts from the fire service department.

8. Relative Importance Index (RII) Method

The Relative Importance Index (RII) method is used to prioritize the factors through ranking. The relative Importance Index is the mean for a factor that gives it weightage in the opinions of respondents. The calculation of RII is shown below:

$$RII = \Sigma W / (A*N)$$

where,

W is the weighting given to each factor by the respondents (ranging from 1 to 5),

A is the highest weight (i.e. 5 in this case), and

N is the total number of respondents.

Higher the value of RII, more the probability of failure of that assessment factor in an event of a building fire. The RII has been computed for each factor to establish the relative importance of the identified factors as per Table 1 below:

9. Survey Analysis and Results

Table 1: Ranking of Risk and reliability assessment factors

S. No.	Risk factors (R)	RII
1	Exhaust systems	0.87
2	Natural Ventilation	0.65
3	Smoke barriers (Smoke/water curtains)	0.55
4	Dampers	0.78
5	Pressurization	0.74
6	Stack effect	0.59
7	Piston effect (in lift/elevator shafts)	0.68
8	Evacuation effect – loss of effective pressurization	0.64

9	Airflow (efficiency for dilution and purging) - Inlet and exhaust point locations (adequacy and efficiency)	0.58
10	Fire-rated Fans (fire rating, capacity -CFD, speed, etc.)	0.67
11	Duct insulation	0.68
12	Smoke reservoir (provision and size)	0.61
13	Compartment components – fire doors, leakages, openings	0.66
14	Wind effect (including the design considerations for wind)	0.65
15	Awareness and training of staff and good practices	0.78

As a process of prioritizing, the risk factors with a Relative Importance Index (RII) of more than 0.70 are selected as the important factors for ranking purposes. The decision of selecting the benchmark of 0.70 has been taken in concurrence with the fire safety experts with experience of over 15 years.
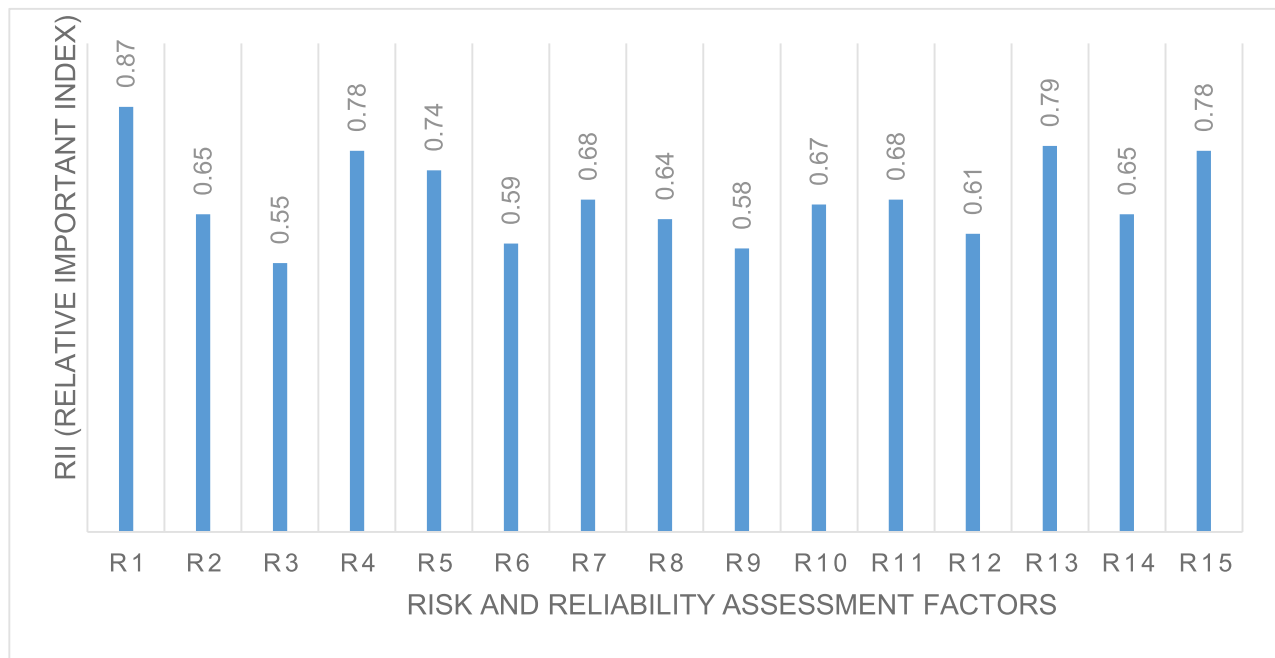
Figure 1 Risk and reliability assessment factors with respect to the RII

It is evident from the survey results that there is a variation in the importance of the factors in terms of their probability of failure. Though all the risk and reliability assessment factors are important as far as fire and life safety is concerned but for the study purpose recommendations and mitigation measures are provided for top-ranked factors with an RII of more than 0.70. These factors are listed below:

- Exhaust systems
- Dampers
- Pressurization
- Awareness /Training and good practices

10. Proposed Mitigation Measures and Recommendations

10.1. Risk of failure of exhaust ventilation

Exhaust ventilation systems, being a vital part of smoke and heat removal and control in buildings, especially with large open areas and high ceilings such as atria, shopping malls, etc. through venting the hot smoke collected high level in space by means of powered exhausting fans. It is important to note that exhaust ventilation can only protect property by permitting active intervention of the fire services to be quicker and more effective (Paul, et al., 2021). The application of exhaust systems is of particular importance for high-rise buildings (Kunhua, 2020). The method of exhaust ventilation plays a significant role

in achieving fire and life safety objectives of the building occupants wherein the failure or inappropriate performance of it may impose hazards of the spread of smoke and heat leading to compromising the tenability conditions required for occupants as well as firefighting operations.

In an event of a fire, to prevent the smoke spread to the adjacent compartmentation via exhaust ventilation systems, the following solutions may be recommended:

- shutting down the fan(s),

- increasing (by double) the speed of rotation of the fan(s),

- converting the supply fan into an exhaust fan, and

- bypassing the support plenum to the exhaust plenum.

The various problems of the failure of exhaust systems can also be addressed by assessing the design and calculations of smoke exhaust systems along with the proper inspection and following an adequate maintenance protocol. It may be noted that the design of the exhaust systems and their installation must be done in compliance with the prevailing fire safety codes and standards along with the provision of any upgradation if required in the future.

10.2. Risk of failure of Fire / Smoke Dampers

A fire damper is a device, that closes automatically upon the detection of heat and a smoke damper is a device installed to control the movement of smoke in accordance with the prescribed standards and codes. The combination fire/smoke dampers can fulfill the function with override controls to pressurize individual spaces (Paul & Kumar, 2021).

Both active and passive fire safety measures are employed in the buildings to eliminate and mitigate building fire risks. The active measures are not able to avoid the spread of smoke and toxic gases efficiently which leads to fatalities among the building occupants whereas, on the other hand, the passive fire protection methods are designed to prevent smoke, toxic gases, and fire from spreading from one zone to another majorly through compartmentation (Paul, et al., 2021). Compartmentation of the building spaces is typically done through fire-rated separations elements like fire partitions, fire walls, fire barriers, smoke barriers, and smoke partitions. These walls, barriers, or partitions are penetrated by an HVAC system, wherein the integrity of these members is maintained using the dampers. According to the design requirement, these dampers can be fire dampers, smoke dampers, or combination fire/smoke dampers.

To ensure the reliability of the dampers, the installation should always be accomplished in accordance with the manufacturer's instructions (i.e., through the installation manual) and prevailing life and fire safety standards. Also, it is vital that the damper manufacturer's approved installation sheets be available for the AHJ (Authority Having Jurisdiction) during installation review. Like other fire protection systems in the buildings, the inspection, as well as maintenance of dampers is essential for the proper operation of the dampers which also helps in assessing the reliability of these systems. It is pertinent to note that the operation of dampers must be interlinked with the BMS system for a prompt response to the smoke spread and thereby addressing the issue from the BMS room only. It is recommended that the operation (opening and closing) of dampers should always be in automatic mode to ensure the effective performance of the dampers to mitigate the risk of the spread of smoke in the building areas.

In addition, the function, proper installation, operation, and maintenance of fire/smoke dampers in sprinkled as well as non-sprinkled buildings are important as these dampers will help in containing the fire and smoke to the compartment of fire origin and also help in the firefighting operations during the fire emergencies.

10.3. Pressurization

A pressurization system in the building is provided to restrict smoke leaking passed closed doors into protected escape routes, such as the staircase through injecting clean air so that the pressure in the stairwell is greater than the adjacent compartment and such pressure difference must be maintained (Paul, et al., 2021). The air leakage in these escape routes can include stairway doors, windows, gaps in walls, natural leakage through wall materials, elevator doors, service shafts, facades, and raised floor systems (Lay, 2014). The pressurization system mainly depends on the peak flow rate which is determined by the number of doors open at any point of time. It is to be noted that any doors being opened beyond the small number assumed in the design case will definitely cause a loss of air which will definitely affect the performance of the pressurization system as intended during the design.

One of the considerations that is required while assessing the performance of the pressurization system is the fluctuation in the neutral axis because of multiple openings leading to variations in pressures in the 'fuzzy zone' including reversal of pressure above the neutral axis. This causes serious disruption performance of the smoke exhaust system in the following ways:

- affecting the response time of the system

- changes in the movement of air, which is not accounted for in the pressure design

- chances of smoke entering the protected zones

It is recommended that the excess pressure must be maintained in the staircase and its lobby so that flow is always outwards,

preventing the entry of smoke from the fire floor. It is imperative to note here that the pressure should not be so high that it prevents the door from opening. A right balance of minimum and maximum pressure difference must be maintained as per prevailing codes and standards. During fire emergencies, the door between the fire floor and the staircase unavoidably will be opened to facilitate the evacuation and firefighting operations. In such situations, the pressure tends to equalize between two zones, and hence the pressurization system must maintain minimum pressures and respond quickly to the door openings. The smoke tends to be held back by the outflow of air if the egress velocity from pressurized spaces is adequately high.

The purpose of the provision of pressurization systems is to ensure the protection of building occupants as well as fire-fighting personnel during building fires. Normally, in high-rise buildings evacuation is planned in a phased manner such that all occupants do not enter the escape stairs simultaneously, instead the occupants at the highest risk evacuating first. The main issue which is to be highlighted here is that instead of the door opening (i.e. one floor at a time), it is likely that most of the fire doors would be partially open (i.e. either fully open or closed). Since pressurization in the buildings is not designed for such circumstances, the consequence is that increased air pressure may be required to retain the desired pressure difference from adjacent areas. This balance of air pressure is a fairly complex task, especially in the case of high-rise buildings (Paul, et al., 2021). To address this issue, building code such as the ASHRAE Design Manual for Smoke Control has suggested different shafts parallel to one another to service different sections of the stairwell.

Pressurization system thus claimed to be the primary line of protection for building cores and protection of life, would tend to fail or underperform, unless all aspects considered. Failure of the pressurization system can thus expose occupants as well as firefighters to serious conditions leading to their incapacitation or death.

10.4. Awareness / Training and good practices

Ironical though, there is still a dearth of formal education opportunities, especially for building professionals as far as fire and life safety is concerned. At any stage of the project, the life safety of the building occupants should be taken into serious consideration.

It is prudent to impart fire safety training and awareness to construction workers, including on issues such as handling combustible materials in a safe manner and handling emergency situations. In addition, eliminating the unsound behavioral practices, unsafe cooking and electric practices, poor capacity of firefighting, limited access to firefighting equipment, and insufficient awareness of the magnitude of fire risks.

Several studies and research also reveal that during site inspections or fire audits, it was established that there is a lack of awareness among the staff or building users, or visitors regarding the provision and operation of installed fire safety equipment such as portable fire extinguishers, Fire Hose Cabinets, Fire Alarm call point, etc. Hence it is imperative to impart knowledge about fire and life safety and develop a program for conducting regular mock drills and training to all building users, especially the staff members so that they can act as the first respondent in case of any fire emergency.

11. Conclusion

Various risk and reliability assessment factors affecting the smoke control and exhaust systems have been identified and subsequently the criticality of the factors through RII method has been established. It is pertinent to note that the reliability of the smoke exhaust system necessitates risk assessment and analysis with backup redundancies. The production of smoke and its properties is influenced by many factors. For example, during a building fire, a material may have a substantial smoke production due to a rapid surface spread of flames even though it is producing rather small amounts of smoke.

The main purpose to implement smoke control systems using physical mechanisms is to avoid the building occupants from encountering smoke and heat as far as possible. These mechanisms include pressurization, compartmentation, dilution, airflow, and buoyancy which are the key determinants of the management of smoke, and thus, smoke management strategies are essential in the building, wherein pressurization and smoke extraction and systems are sub-sets of this strategy.

12. References

● CCOHS, 2016. How do I know which type of ventilation system is best for my workplace?. Canada: Canadian Centre for Occupational Health & Safety.

● CEB, 2018. Clean Energy Brands, WY USA. [Online] Available at:http://www.cleanenergybrands.com/shoppingcart/cate gories/wind-turbines-small-/?fullSite=1

● Ferreira, M., 2016. How Reliable Is Your Smoke Control System. ESEngineered System, 1 January.

● IFSS, 2020. International Fire Safety Standards: Common Principles "Safe Buildings Save Lives". 1 ed. Geneva: International Fire Safety Standards Coalition.

● Klote, J., 2016. SFPE Handbook of Fire Protection Engineering,. s.l.:Society of Fire Protection Engineers.

● Kunhua, X., 2020. Study of Smoke prevention and Exhaust System for High-rise Buildings; Earth and Environmental Science- International Conference on New Energy and Sustainable Development. s.l., IOP Publishing.

- Lay, S., 2014. Pressurization systems do not work & present a risk to life safety, Case Studies in Fire Safety. Elsevier, 1(http://dx.doi.org/10.1016/j.csfs.2013.12.001), pp. 13-17.

- Morgan, H. P. et al., 1999. Design methodologies for smoke and heat exhaust ventilation. s.l.:s.n.

- NBC, 2016. National Building Code, Part 4 - Fire and Life Safety. s.l.:s.n.

- Paul, V. K., Basu, C., Rastogi, A. & Kumar, K., 2021. Essentials of Building Life and Fire Safety. First ed. India: COPAL Publishing.

- Paul, V. K., Basu, C., Rastogi, A. & Kumar, K., 2022. Status of Fire Safety in Healthcare Facilities in India. International Journal of Architecture and Infrastructure Planning; https://architecture.journalspub.info/index.php?journal=JAIP&page=index, 8(1), pp. 1-11.

- Paul, V. & Kumar, K., 2021. Risk and reliability assessment of fire and life safety in buildings- a case of healthcare building. New Delhi, India: FIREINDIA.

- SGS, 2021. Controlling Smoke Movement Within a Building;Smoke Guard Systems. USA: CSW INDUSTRIAL COMPANY .

- Singh, R., 2020. Naturally Ventilated Buildings and Fire Spread: A study of building performance using computer simulation. 1 ed. India : s.n.

- Yuen, A. C. Y. et al., 2019. Natural Ventilated Smoke Control Simulation Case Study Using Different Settings of Smoke Vents and Curtains in a Large Atrium. MDPI-www.mdpi.com/journal/fire, 2(7), pp. 1-18.

The Effectiveness of Measurement of Volatility Through Moving Average Envelope and Bollinger Bands in Stock Price Movements in Indian Market

Arkaprava Chakrabarty *
Dr. Ayan Majumdar **

Abstract

In any stock market, a trading system is based on long-term, intermediate-term, and short-term indicators. Some "lagging" indicators, like the simple moving average and the exponential moving average, can be used to figure out the direction of a medium- to long-term trend. On the other hand, some "leading" oscillators can tell a trader when a trend is losing momentum and about to turn around. This paper focuses on how well Moving Average Envelopes and Bollinger Bands work to measure how volatile a stock price is. It is mostly about how these tools for technical analysis are used in the NIFTY 50 index. The paper also wants to do a study to evaluate the speed of the indicators to explain the sensitivity and response time of the data collected from a secondary survey in the Indian Capital Market.

Keywords: Technical analysis, Volatility Studies, Moving Average Envelope, Bollinger Bands, Intra Day Trading, Sharpe Ratio.

1. Introduction

Since 1991, the Indian Stock Market has been revolutionized and has had a significant impact on the Indian Economy. The stock market instruments ended up making a tremendous impact on Indian business sectors post the liberalization. These instruments have become crucial to the government as well as other sectors, as they offer funds to the potential investors. The liquid fund that these instruments provide becomes essential for the resource allocation and long term growth of a business and therefore of the ecnomy and the enterprise too. The initial phase of the economic liberalization created a demand for liquid funds and the stock market played a key role in satisfying this demand.

At the close of 20th century, greater emphasis was provided on the capital market, as it is accommodated within the nation's restructuring strategy.

Systematic mechanism are used in the market now to generate profit, based on a study of variety of characteristics and the past trend of price fluctuation (Curcio et al., 1997). The mechanism which assist in this interpretation of the market are trend, momentum, volume, direction and volatility. This paper would attempt to discuss the forecasting of the stock market price movements based on the interpretation of the acquired data's volatility. Apart from the factors influencing the stock market -

internal (interest and inflation rates, dividend policies, ROI, dividend pay-out ratios), external (domestic credit policies including fiscal and monetary), and international (inter-country trade decisions, business conditions) factors, the market volatility depends also on the total volume of shares traded in a particular time frame, also known as floate of stocks or the volume of traded stocks (Kayal & Mondal, 2020). Above all the factors, already spoken about, the influence have an impact on the prediction of the stock market price movements, some technical analysts even make use of intra day trade filter, which then becomes another criteria that influences the prediction of the data. This alone however remain sufficient to generate profit in all possible scenarios (Curcio et al., 1997). According to economists, technical analysis can generate potential for systemic profits based on price trends or historical pricing, but arbitrage can quickly erase these opportunities. In other words, if a group of traders determine their predictions based on prior market movements, those who believe in fundamental research will always pick a profitable position. Long-term, however, these fundamental research traders would drive the other traders out of the market. By fixing the regression accuracy parameter, Demir et al. (2020) demonstrate the usefulness of Technological Indicators in Day Ahead Electricity Market (Comodity Market) forecasting. In addition, chart-based technical analysis is one of the oldest and most widely used approaches for determining

* Research Scholar, Department of Management and Business Administration, Aliah University, Kolkata, India
   arkaprava_c@yahoo.co.in
** Assistant Professor, Department of Management and Business Administration, Aliah University, Kolkata, India
   amajumdar.publication@gmail.com

the volatility of the stock price. Typically, Time Series Data Analysis is utilized by chartists to evaluate past price patterns and volume, which indicates the capacity to forecast future price movements. Bollinger Bands (BB) and Moving Average Envelope (MAE) are two of the most popular strategies among traders. Bollinger Band is a channel indicator created by John Bollinger in 1980 that reflects the price movements of a stock within a specific range based on the Simple Moving Average (SMA) or Exponential Moving Average (EMA) against a specific Standard Deviation (SD) below and above the Moving Average (MA) line. The buy-hold-sell indication adjusts correspondingly when the real price reaches the upper or lower line (Leeds, 2012). The primary purpose of BB is to calculate the range of volatility for any stock price or index. Investors must base their choices on the junction or cut movements of the stock price from down to up and vice versa with the BB line. This Band is comprised of the Upper BB Band, the Lower BB Band, and the Intermediate MA Line. The interval between the upper band, lower band, and middle band determines the volatility. The default parameters are a 20-period Simple Moving Average and 2% Standard Deviations (John Bollinger, 2001).

The Moving Average Envelope (MAE) is a percentage-based trend-setting indicator derived from the EMA/SMA and the standard deviation of a stock's price. In general, 20 periods of MA and 5 percent of SD are considered. The SD provides a band above and below the EMA line for buy-sell-hold decisions.

The remainder of the paper is structured according to the performance of these two volatility-based indicators on the Indian Capital Market. Here, about 2500 samples are obtained for each stock under NIFTY 50 which is the flagship index of National Stock Exchange.

2. Objectives of the Study:

- The primary purpose of this study is to examine the efficiency of Bollinger Bands and Moving Average Envelopes in determining the degree of volatility associated with short-term investments such as day trading and similar activities.

- The secondary purpose is to carry out a comparative study earch between these two technical analysis indicators on some chosen Indian equities within a selected time frame.

- In addition to this, the paper will make an effort to explain to Indian investors the sensitivity of BB and MAE as well as the accuracy of predictions made by these indicators.

3. Review of Literature:

Taylor & Allen (1992) state that the various Technical Analysis techniques can enhance the frequency of traders. They believe in Chartism for intraday trading and observe the behavior of 200 traders. According to the Bootstrap Method described by Brock

et al. (1992) and Levich & Thomas (1993), daily data are collected to determine acute profitability. According to Shiller (1990), a company describes the qualitative perspective of the common models' explanation for price variations. Specifically, the company acknowledged that investors' reactivation has more to do with their psychological or sociological ideas than with economic conditions. Whereas Silagadze (2008) indicates in his research work that traders utilize the Moving Average indicator to measure the support and resistance of the various Technical Analysis lines, Moving Average is used by traders to evaluate support and resistance. They describe a support line at which the bulk of traders' mindset was predicated on the notion that the price will increase. Alternatively, (Abbracciavento et al., 2020) provide a data-driven adaptive control technique that can measure returns over a variable time period. In his work, Edward D. Dobson (1994) cites the Mare Chaikin's Bomar Band, which is comprised of a predetermined proportion of data from the preceding years. This model highlighted the 21-day moving average and indicated that 85 percent of the data should be included inside the bands. Additionally, the book concentrates on the percent B and the bandwidth, which is a measure of negative values and values greater than 100 when prices are outside the bands. Comparing the profitability of Moving Average Envelopes and Bollinger Bands, Leung & Chong (2003) perform an empirical analysis between Moving Average Envelopes and Bollinger Bands. This study demonstrated that the BB is superior to the MAE at capturing abrupt price fluctuations.

4. Methodology and Calculation:

Moving Average Envelope and Bollinger Bands are generated in this article using the Simple Moving Average of the Closing prices of NIFTY-listed equity shares. For this computation, the equation is as follows (Leung & Chong, 2003):

$$SMA_N^{(t)} = \frac{\sum_{i=t-N+1}^{t} P(i)}{N} \tag{1}$$

The Moving Average Envelopes of N-day at time t is defined as:

$$MAE_N^{\%K}(t) = SMA_N(t) \times (1 \pm \%K) \tag{2}$$

Where,   N = No. of days of Simple Moving Average

t = Mean or Average of Past N days Closing Share Prices

%K= Constant SD Percentage

Bandwidth: The width of the MAE depends on the value of %K. This percentage is taken based on the standard deviation from the SMA line of N days. The trading rules for the Moving Average Envelopes (Leung & Chong, 2003) are defined as follows:

Buy:
$$P_N(t-1) < MAE_N^{Low}(t-1)$$

$$P_N(t) > MAE_N^{Low}(t)$$

Sell:
$$P_N(t-1) > MAE_N^{Up}(t-1)$$

$$P_N(t) < MAE_N^{Up}(t)$$

The Bollinger Band of N-day (Leung & Chong, 2003) at time t is defined as:

$$BB_N^K(t) = SMA_N(t) \pm K \times \sqrt{\frac{\sum_{i=t-N+1}^{t}[P(i)-SMA_N(i)]^2}{N}} \quad (3)$$

Where   K=Standard Deviation on the Closing price of the share of Nth day

N = No. of days of Simple Moving Average

$$\%B = \frac{Current\ Close-Lower\ Band}{Upper\ Band-Lowee\ Band} \quad (4)$$

Where, %B = It is the indicator that reflects the position of the share at a specific date inside of the BB. The value of %B can be negative or more than 1 when the actual share price is outside the bands. At 1 the price of the share is at the upper band and at 0 the same is at the lower band.

Bandwidth: It reflects the breadth of the BB based on the standard deviation, which is determined using the closing price and market trading volume (Edward D Dobson, 1994). Narrowband implies a highly volatile share price in the near future, whereas wideband indicates a low-volatility condition vulnerable to multicollinearity.

The trading rules for Bollinger Bands are:

Buy:
$$P_N(t-1) < BB_N^{Low}(t-1)$$

$$P_N(t) > BB_N^{Low}(t)$$

Sell:
$$P_N(t-1) > BB_N^{Up}(t-1)$$

$$P_N(t) < BB_N^{Up}(t)$$

When the closing price of a security is above the upper envelope or band, the condition is deemed overbought, and when it is below the lower envelope or band, the situation is deemed oversold. However, the buy-hold-sell choice is dependent on the

direction of price movement above/below the upper/lower band (Lento et al., 2007). Therefore, when the current price of a stock is overbought or oversold, it is preferable to remain inactive or maintain the prior position until the price begins to move toward the band or envelope.

Sample Description: In this article, based on the beta value of NIFTY 50 index of June 2022, 5 stocks from the NIFTY 50 Index are chosen along with the index. The stocks are selected based on the availability of data the the period of November 2010 to November 2020. The total amount of samples for each stock are 2463 (considering 250 working days in a year on average).

Table I: Top Constituents by Weightage of Beta as on June 2022

Company's Name	Weight(%)
Macrotech Developers Ltd.	2.56
Indiabulls Real Estate Ltd.	2.49
Tata Motors Ltd.	2.47
DLF Ltd.	2.45
IDFC Ltd.	2.45
Godrej Properties Ltd.	2.33
Adani Enterprises Ltd.	2.29
Angel One Ltd.	2.23
Steel Authority of India Ltd.	2.23
Delta Corp Ltd.	2.22

Source: https://www1.nseindia.com/content/indices/
Factsheet_Nifty200_Momentum30.pdf

For this study, the highest beta stock Macrotech Developers Ltd. is not considered as the data for the above mentioned period is not available. So, the samples are collected from Idiabulls Real Estate (IBREALEST.NS), Tata Motors Ltd. (TTM.NS), DLF Ltd.(DLF.NS), IDFC Ltd.(IDFC.NS) and Godrej Properties Ltd. (GODREJPROP.NS). The reason to choose these stocks is NIFTY High Beta 50 Index is diverse. The index measures NSE High Beta stocks. Beta measures stock returns' market sensitivity. NIFTY 50 performance represents market. Turnover and market capitalization are used to make the 50 stock index investible and reproducible. NIFTY High Beta 50 Index is used for benchmarking, launching index funds, ETFs, and structured producs. Also the study reverify the selection of stocks volatility by applying sharpe and sortino ratio.

Table II: Daily and Annual Sharpe Ratio of Sample Stocks and NIFTY

Daily Sharpe Ratio						
	DLF	GDPRP	IBREAL	IDFC	TTM	NIFTY
Mean of Excess Return	-1.98%	-1.92%	-1.97%	-2.01%	-1.99%	-1.96%
Risk free Rate of Return	2%	2%	2%	2%	2%	2%
Stdev of Excess Return	3%	2%	4%	3%	3%	1%
Sharpe Ratio (Daily)	-0.64	-0.86	-0.53	-0.79	-0.73	-1.76
Annual Sharpe Ratio						
Annual Return/CAGR	-5.62%	13.35%	-9.12%	-10.45%	-5.87%	8.17%
Risk free Rate of Return	2%	2%	2%	2%	2%	2%
Annual Stdev/Annualized Volatility	49%	35%	59%	41%	43%	18%
Sharpe Ratio (Annual)	**-0.16**	**0.32**	**-0.19**	**-0.31**	**-0.18**	**0.35**

In Table II, Sharpe Ratio of the returns of stocks are calculated. The Sharpe ratio is a comparative indicator of risk-adjusted return. It does not reveal much about the performance of the fund when viewed alone. The measure also takes into account standard deviation, which presumes a symmetrical distribution of returns. The Sharpe ratio could not be a reliable indicator of performance for asymmetrical return distributions with Skewness larger or less than zero and Kurtosis greater or less than 3. From the above table, it shows that the daily sharpe ratio is negative in all cases, i.e. stocks are highly volatile and can be judged by the volatility based indicators BB and MAE here. Now, the negative deviation is also important to know about the loss related with the performance which can be measured by sortino ratio in the below table.

Table III: Daily Sortino Ratio of Sample Stocks and NIFTY

Daily Sortino Ratio						
	DLF	GDPRP	IBREAL	IDFC	TTM	NIFTY
Sum of (Return - Risk free Return)^2	283%	186%	341%	229%	235%	123%
Risk free Rate of Return (Rf)	2%	2%	2%	2%	2%	2%
Number of Sample	2438	2438	2438	2438	2438	2438
Downside Variance	0.12%	0.08%	0.14%	0.09%	0.10%	0.05%
Downside Deviation	0.03	0.03	0.04	0.03	0.03	0.02
Mean of Excess Return	-1.98%	-1.92%	-1.97%	-2.01%	-1.99%	-2.52%
Sortino Ratio (Daily)	**-0.58**	**-0.70**	**-0.53**	**-0.66**	**-0.64**	**-1.12**

Table III represents about the sortino of the returns of these 5 stocks and index which represents the negative risks or bad risks. The Sortino ratio is an enhancement of the Sharpe ratio, another indicator that aids investors in assessing an investment's performance after risk has been taken into account. The Sortino ratio stands out because it recognises the distinction between upward and downward risks. More particular, whereas the Sharpe ratio evaluates both upside and downside risks equally, it offers a correct rate of return given the possibility of negative risk. Here, all the stocks and index have downside deviation or neative sortino which justifies the selection of stocks of high volatility.

In this study, two parameters are used e.g. SMA and SD. To judge the volatility of these indicators, 20 days, 100 days, and 250 days SMA and 2% and 5% SD are used. The SMA and SD are alternatively used in this study like 20 Days/2%, 100 Days/2%, 250 Days/2%, 20Days/5%, 100 Days/5% and 250 Days/5%.

5. Analysis and Findings:

Table IV potrays accuracy rate of prediction of BB and MAE based on the different SMA and SD. It has been observed from the table that both the volatility measurement indicators and are working properly in these specific periods of 10 years. But Moving Average Envelope works better when the numbers of days of SMA are shorter or the N value is low. But when the value of N is higher Bollinger Band works better. In this study, 10 years of daily NIFTY data of 50 different stocks are taken into consideration where it is reflected that the velocity of and are very low in case of high SMA. Whereas, Changes its signal very fast so any long/short position is converted into short/long. On the other hand, the signal prescribed by the remains the same for a period range of 20 to 50 days of SMA. As the bandwidth of the band is considered in the case of , the strength of the signal can be calculated, and based on that, the longevity of can easily be judged.

Table IV: Percentage of Correct and Incorrect Prediction Returns from BB and MAE

Name of the Stock	20 / 2%		20 / 5%		100 / 2%		100 / 5%		250 / 2%		250 / 5%	
	BB	MAE	BB	MAE	BB	MAE	BB	MAE	BB	MAE	BB	MAE
DLF.NS												
Correct	0.17	0.46	0.58	0.53	0.37	0.59	-	0.55	0.58	0.58	-	0.48
Incorrect	0.83	0.54	0.42	0.47	0.63	0.41	-	0.45	0.42	0.42	-	0.52
GODREJPROP.NS												
Correct	0.60	0.56	0.47	0.49	0.27	0.49	-	0.48	0.44	0.45	-	0.56
Incorrect	0.40	0.44	0.53	0.51	0.73	0.51	-	0.52	0.56	0.55	-	0.44
IBREALEST.NS												
Correct	0.56	0.51	-	0.48	0.57	0.53	-	0.53	0.48	0.46	-	0.51
Incorrect	0.44	0.49	-	0.52	0.43	0.47	-	0.47	0.52	0.54	-	0.49
IDFC.NS												
Correct	0.50	0.45	0.53	0.45	0.46	0.48	-	0.55	0.45	0.28	-	0.48
Incorrect	0.50	0.55	0.47	0.55	0.54	0.52	-	0.45	0.55	0.72	-	0.52
TTM.NS												
Correct	0.45	0.53	0.59	0.52	0.48	0.54	-	0.53	0.42	0.42	-	0.49
Incorrect	0.55	0.47	0.41	0.48	0.52	0.46	-	0.47	0.58	0.58	-	0.51
NIFTY 50												
Correct	0.60	0.56	0.59	0.54	0.50	0.55	-	0.48	0.42	0.58	-	0.62
Incorrect	0.40	0.44	0.41	0.46	0.50	0.45	-	0.52	0.58	0.42	-	0.38

MAE rule performs better than BB rule when N = 10, 20, and 50, but BB rule performs better when N = 100. This article therefore recommends employing Moving Average Envelopes for short-term investments and Bollinger Bands for long-term investments. Since technical trading rules are typically created for short-term investment purposes, it is plausible to conclude that Moving Average Envelopes are superior to Bollinger Bands in practice. Bollinger Bands can capture sudden price fluctuations that the Moving Average Envelopes cannot; they do not out-perform the Moving Average Envelopes in terms of profitability.

The above tabulation it shows that as the SMA increses, the performance of BB also increases. In addition, the results suggested that the MAE tends to generate more lucrative trading signals in the near term. BBs are incapable of producing profitable trading rules and routinely underperform the buy-and-hold strategy. Bollinger Band can determine the volatility of a stock's price based on the volume of transactions that occurred at a certain time. The breadth of Bollinger Bands (BB) varies based on the movement of prices around the mean as opposed to the moving average. Consequently, as the mean changes, the BB width will expand or contract. According to BB, a normal distribution with 2% standard deviations will account for around 95% of the price fluctuations. In this situation, the upper bound of MAE and BB is referred to as overbought, and vice versa. It is a signal for sales and purchases. However, when the amount of SD increases, the percentage of price capture in BB will drop in the short term. The table reveals that both the BB and MAE volatility measuring indicators function appropriately throughout these particular 10-year periods. But Moving Average Envelope is more effective when the number of days is short or when N is small. But when N is more, Bollinger Band performs better. These are the test results observed in the case of short-term trading taking the value or daily data. In this study, we have taken 10 years of daily data of 2463 samples of each stock of NIFTY 50 where the decision is taken by changing the SMA and SD. But in the case of Intraday Trading where the 5 minutes to 15 minutes candles are important to make any decisions, the results reflect a different picture.

Table IV: Percentage of Correct and Incorrect Prediction Returns from BB and MAE

Name of Stocks and Index	Parameters	BB (20,2%)	MAE (20,2%)	BB (100,2%)	MAE (100,2%)	BB (20,5%)	MAE (20,5%)	BB (100,5%)	MAE (100,5%)
DLF	Mean of Excess Return	-5%	-2%	-2%	0.30%	-1%	-1%	0	-1%
	Sharpe Ratio	-1.23	-0.26	-0.52	0.07	-0.17	-0.26	0	-0.19
GDPRP	Mean of Excess Return	-1%	-1%	-2%	-1%	0%	0%	0	-1%
	Sharpe Ratio	-0.41	-0.45	-0.53	-0.62	-0.05	-0.19	0	-0.68
IBREALEST	Mean of Excess Return	-1%	1%	-1%	0%	-1%	0%	0	0%
	Sharpe Ratio	-0.21	0.21	-0.22	-0.1	-0.13	0.01	0	0.1
IDFC	Mean of Excess Return	-1%	-1%	-1%	-1%	-1%	-1%	0	-1%
	Sharpe Ratio	-0.3	-0.37	-0.32	-0.34	-0.25	-0.42	0	-0.25
TTM	Mean of Excess Return	-1%	-1%	-1%	-1%	-1%	-1%	0	-1%
	Sharpe Ratio	-0.37	-0.22	-0.34	-0.39	-0.15	-0.27	0	-0.44
NIFTY	Mean of Excess Return	-1%	-1%	-1%	-1%	-1%	-1%	0	-1%
	Sharpe Ratio	-0.49	-0.7	-0.64	-1.05	-1.11	-0.94	0	-1.16

The above table shows the mean of excess return and the strength of the indicators used. Here, the volatility of every stocks are measured by Bollinger Bands and Moving Average Envelope in SMA 20 days or 100 days and SD of 2% and 5%. The table represents that in case of 20/2% level and 20/5% level, MAE performs better as it generates lower Sharpe and Lower Mean of returns in most of the cases. But when the SMA level has increased from 20 days to 100 days, at 2% level of SD, the performance of BB is better as it generates lower Sharpe and lower negative mean than MAE.

6. Conclusion:

In the case of Moving Average Envelope, the volatility is determined by the value of % K. The more the value of % K, the more the volatility will be decided, and consequently, the quality of the indicator's signals will decrease. Based on the analysis, it has been determined that BB alone is ineffective for short-term investments, and it is plausible that more advanced optimization technique, such as Butler & Kazakov's (2010) Particle Swarm Optimization (PSO), will yield more acceptable results for this sort of dataset. It has also been shown that MAE outperforms Bollinger Band when the number of days or investment period is reduced while maintaining the same standard deviation percentage. Throughout the investigation, it was determined that both indicators require some time to provide an accurate indication. Consequently, intraday trading is

impossible with this form of volatility indicator. Momentum Indicators, such as MACD or RSI, can provide a superior outcome in this scenario. Bollinger Bands with the appropriate Bandwidth can aid traders in making a Buy-Hold-Sell decision when the investment term is moderate. The study also demonstrates that Bollinger Bands can predict or capture the abrupt price movement of any stock, however Moving Average Envelope cannot. This is also reinforced by (Kyriakou et al., 2020), which examines the impact of feedback trading methods on three fictitious portfolios of real estate sectors to determine the volatility of the long-term market. If we incorporate transaction expenses, then intraday outcomes may be improved (Curcio et al., 1997). Therefore, it can be stated that neither volatility-based indicator performs adequately for intraday or short-term trading (Abbracciavento et al., 2020).

7. References:

- Abbracciavento, F., Formentin, S., & Savaresi, S. M. (2020). Data-driven stock trading in financial markets: an adaptive control approach. International Journal of Control. https://doi.org/10.1080/00207179.2020.1837395
- Brock, W., Lakonishok, J., & LeBaron, B. (1992). Simple Technical Trading Rules and the Stochastic Properties of Stock Returns. The Journal of Finance, 47(5), 1731–1764. https://doi.org/10.1111/j.1540-6261.1992.tb04681.x

- Butler, M., & Kazakov, D. (2010). Particle swarm optimization of bollinger bands. Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 6234 LNCS, 504–511. https://doi.org/10.1007/978-3-642-15461-4_50

- Curcio, R., Goodhart, C., Guillaume, D., & Payne, R. (1997). Do technical trading rules generate profits? Conclusions from the intra-day foreign exchange market. International Journal of Finance and Economics, 2(4), 267–280. https://doi.org/10.1002/(SICI)1099-1158(199710)2:4<267::AID-JFE57>3.0.CO;2-J

- Demir, S., Mincev, K., Kok, K., & Paterakis, N. G. (2020). Introducing technical indicators to electricity price forecasting: A feature engineering study for linear, ensemble, and deep machine learning models. Applied Sciences (Switzerland), 10(1). https://doi.org/10.3390/app10010255

- Edward D Dobson. (1994). Understanding Bollinger Bands (pp. 17–28). Traders Press.

- John Bollinger. (2001). Bollinger on Bollinger Bands (T. Ron-Isana (ed.)). The McGraw Hill Companies, Inc.

- Kayal, P., & Mondal, S. (2020). Speed of Price Adjustment in Indian Stock Market: A Paradox. Asia-Pacific Financial Markets, 27(4), 453–476. https://doi.org/10.1007/s10690-020-09303-7

- Kyriakou, M. I., Babalos, V., Kiohos, A., & Koulakiotis, A. (2020). Feedback trading strategies and long-term volatility. Quarterly Review of Economics and Finance, 76, 181–189. https://doi.org/10.1016/j.qref.2019.05.011

- Leeds, M. (2012). Bollinger Bands Thirty Years Later. December 2012. http://arxiv.org/abs/1212.4890

- Lento, C., Gradojevic, N., & Wright, C. S. (2007). Investment information content in Bollinger Bands? Applied Financial Economics Letters, 3(4), 263–267. https://doi.org/10.1080/17446540701206576

- Leung, J. M. J., & Chong, T. T. L. (2003). An empirical comparison of moving average envelopes and Bollinger Bands. Applied Economics Letters, 10(6), 339–341. https://doi.org/10.1080/1350485022000041032

- Levich, R. M., & Thomas, L. R. (1993). the Significance of Technical Trading-Rule Profits. Journal of International Money and Finance, 12(5), 451–474.

- Ponsi, E. (2016). Moving Average Envelopes and Bollinger Bands. Technical Analysis and Chart Interpretations, 215–221. https://doi.org/10.1002/9781119204800.ch17

- Shiller, R. J. (1990). Market Volatility and Investor Behavior. The Hundred and Second Annual Meeting of the American Economic Association, 80(2), 58–62.

- Silagadze, Z. K. (2008). Moving Mini-Max - a new indicator for technical analysis. June. http://arxiv.org/abs/0802.0984

- Taylor, M. P., & Allen, H. (1992). The use of technical analysis in the foreign exchange market. Journal of International Money and Finance, 11(3), 304–314. https://doi.org/10.1016/0261-5606(92)90048-3.

A Study on the Various Factors Influencing Consumer Behaviour while Procuring Various Products Through Traditional Brick & Mortar Stores and E-Commerce

Dr. Kavita. A. Jain *
Ashish Sangwan **

Abstract

The Indian retail market, which ranks fourth across the globe in terms of size and contributes 10% to the nation's overall GDP, is estimated to be worth 1200 billion US dollars, whereas Indian Ecommerce industry stands at 84 billion US Dollars. Prior to the evolution of E-commerce, most of the business activities were carried out through traditional retail business at the Brick-and-Mortar Stores. With the cost of Data & Smartphone's being lowest and Internet penetration growing enormously, India is witnessing a drastic rise in Digitally influenced spending's resulting in exponential growth in E-Commerce Sector. Consumers nowadays have a freedom to opt between Online and Offline modes to procure various products as per their convenience. There is a need to study various factors that influence consumer buying behaviours while procuring various products through Traditional Brick & Mortar mode or the E-Commerce. Though a lot of studies regarding comparative analysis of overall Online & Offline shopping is available, there isn't much information from earlier studies that throw light on the different product categories separately. Present paper focusses on 11 prominent household categories separately. The study has observed and analysed various factors that influence consumer behaviour while buying these products online and offline.

Keywords: E-Commerce, Brick vs Click, Consumer Behaviour, Traditional Market, Delhi-NCR etc

1. Introduction

Brick & Mortar is usually referred to the conventional building material. Now a days "Brick & Mortar stores" is used as a connotation to old fashioned business model. Widely all the commercial activities were conducted at these brick-and-mortar stores prior to the emergence of e-commerce. Despite it being difficult to establish the exact timeline of brick-and-mortar retail's evolution, it has existed since the dawn of civilizations, when peasants gathered in marketplaces to exchange their harvested crops, livestock, and animal goods. Melas, Haats, and Mandis used to be the retail set-ups of Indian landscape in the Medieval era. These marketplaces with time advanced into more structured retail stores as commerce got more organized throughout time. India's retail market is divided into organized and unorganized retail. The Indian retail market is extremely competitive since unorganized sellers predominate. Food and other consumables products are sold in about 13 million Kirana and neighbourhood establishments. Current Indian retail market, which ranks fourth across the globe in terms of size and contributes 10% to the nation's overall GDP, is estimated to be worth 1200 billion US dollars. By 2025, the Indian retail sector is projected to generate 1750 billion US dollars.

* Professr, Baba Mastnath University, Rohtak
   anukav@gmail.com
** Research Scholar, Baba Mastnath University, Rohtak
   sangwan.a@gmail.com
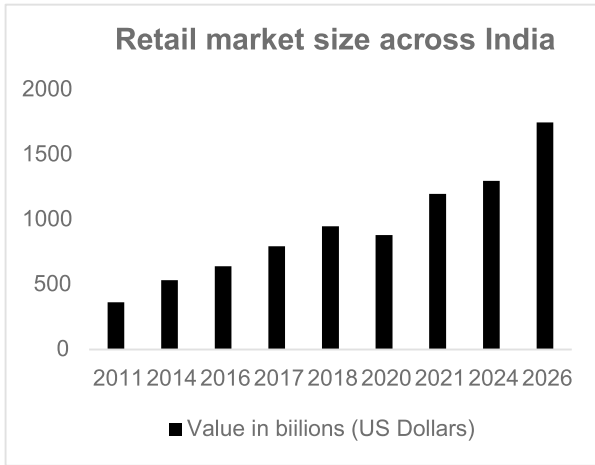
Retail market size across India

Fig 1: Retail Market Trend in India
Source: Statista 2022

Gone are the days when the commercial activities like the exchange of goods and services took place only in the traditional mode, wherein the customer has to go to the market, look at the variety of products, choose the required stuff and purchasing them by paying the specified amount. These days E-Commerce has begun to be a requisite for most of the Commercial activities and one can now buy goods, pay bills, or transfer money in just one click just sitting at home, workplace or even on move. With a moderate start in 1995-96, E-commerce has witnessed blistering growth in the recent years.

In early days, E-Commerce was mostly confined to travel related or matrimonial alliance services.

The credit to this rapid growth in E-commerce goes to the expanding Internet user base and the availability of Budget Smartphones in Indian market. With 0.83 billion internet users of India's 1.39 billion population, Indian E-commerce industry stands at 84 billion US Dollars. With the current growing trends, Indian E-commerce industry is expected to become 188 billion US dollars by 2025 and 300 billion US dollars by 2030.

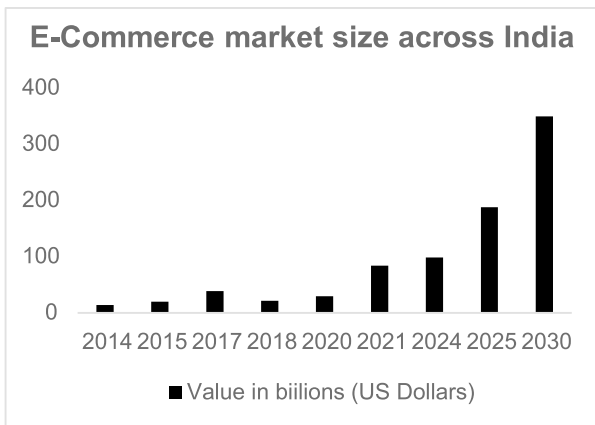## E-Commerce market size across India

Fig. 2: E-commerce Market Trend in India
Source: Statista 2022

Amazing discounts and offers available online somehow have an impact on nearby brick and mortar businesses. They have a lasting impact on consumer buying behaviour while opting Online or offline mode of purchase for the same product. In India, a good and healthy competition exists between online and offline retailers.

It is necessary to study and analyse the factors that affect consumer behaviour patterns and their choice of an offline or online purchasing method. This research seeks to analyse various factors that influence consumer behaviour while buying 11 categories of products online and offline. These 11 Categories are Daily Grocery Essentials, Monthly / Weekly Grocery, Clothing/Shoes, Food, Accessories, Cosmetics, Electronic Devices, Books & Magazines, Movie & Entertainment, Travel Arrangement, Computer/Hardware & Mobile Handsets.

2. Brick Vs Click

The growing popularity & convenience of e-commerce is affecting traditional shopping at large, as retailers are transitioning for better pricing, ease which is more readily available online along with promotional strategies, which have a wide reach to the Internet. As long as they are connected to the Internet, clients can even shop conveniently from anywhere in the globe via the online channel. These are just a few of the fundamental motivations driving offline retail enterprises to enter the online market. Brands typically sell cheap merchandise online rather than offline, putting extra pressure on conventional merchants. Millions of products are available online as compared to offline so there has been a slight dip in footfall of physical stores thereby affecting sales. The great deals and discounts offered online further affects brick-and-mortar players all around. In the country, there is a good and healthy competition between online and offline retailers. Online players should try to enhance the customer experience by developing their physical presence. The basic idea is to carry it to another level of differentiation and innovation. If online retailers retain to consumers and plan their strategies as per the customer requirement, sustaining to their stupendous growth which the sector is witnessing in recent times is not a difficult task. With the emergence of e-Commerce, people can now buy goods, pay bills, or transfer money in just one click through E-Commerce.

Initially well-off Men who were Tech- Savvy used to lead Indian E-Commerce and usually shopped for Mobiles, Electronic items. But in last few years the trend has changed and now it is being witnessed that new shoppers are more often Females, Older people from the middle-income group and their purchases are expanding in the number of categories in which they buy online. This scenario is now quite evident both in Urban & Rural markets. Online retailers are now delivering to

approximately 20K pin codes out of nearly One Lakh of pin codes across the country. Lot of dynamics got changed during the Covid pandemic. By 2030, it is predicted that rural areas would account for 24% of online spending and 54% of online shoppers. Pandemic and movement restrictions have proved to be a great impetus for the growth of Online trade, it has accelerated the Growth of E-Commerce by Three to Four Years. Various new consumer groups that had previously been e-commerce novices started using it, mostly because there weren't any other options to physically shop during the lockdown.

A. Growth of E-Commerce in Indian Context

E-commerce is a phenomena that is expanding quickly. It is currently engulfing almost all companies and businesses. It is the potent tool that is revolutionizing how it manufactures and dispense goods and services. Online shopping and purchase have evolved into a common practise in the modern world along with the growth in the use of the World Wide Web and the Internet. Online sales have risen during the past five years. In India, the e-commerce industry has experienced consistent, extraordinary growth and has begun to take shape. There are many elements supporting global e-commerce growth, particularly in nations like India. India has unquestionably experienced phenomenal growth in e-commerce.

India's metro areas are predicted to grow at a rate far higher than the rest of the nation's cities. The Indian e-commerce sector had significant sales growth in 2021, and growth of 21.5% is predicted for 2022 and will reach $74.8 billion. The e-commerce market in India will reach US$ 99 billion by 2024, expanding at a 27% CAGR over 2019 to 2024 and US$ 350 billion by 2030. Government initiatives like Digital India are constantly introducing people to online trading. The primary variables expected to fuel this expansion are predicted to be apparel and groceries. Boston Consulting Group has predicted that the Fashion, food, and FMCG will make up nearly half of the online retail market by 2030, up from just over 30% today.

The market for Online groceries is predicted to grow at a CAGR of 33% to reach US$ 26.93 billion in 2027 from US$ 3.95 billion in Financial Year 2021. The next stage of expansion, according to JP Morgan analysts, will be driven by e-grocery and smaller communities. As per Grant Thornton, between 2021 and 2025, e-commerce sales are projected to grow at a CAGR of 18.2%, reaching US$ 188 billion. By 2024, online retail penetration is predicted to increase from its current rate of 4.7% to 10.7%. In Financial year 2021, India had the third-largest online consumer base with 150 million users; by financial year 2026, that number is predicted to rise to 350 million. The top eight Indian cities' annual warehouse space absorption would rise from 31.7 million square feet in 2021 to 76.2 million square feet by March 2026 as a result of a boom in e-commerce. The top

eight Indian cities' annual warehouse space absorption would rise from 31.7 million square feet in 2021 to 76.2 million square feet by March 2026 as a result of a boom in e-commerce.

3. Research Methodology

Consumers are extremely intelligent, talented, and busy, making it tough to hold them in one's grasp. Researchers conclude that every consumer wants a comfortable and hygienic environment for their shopping based on the aforementioned evaluation of the literature. The majority of information on firm products and services is in the hands of today's educated consumers thanks to the internet. While shopping, customers want to feel calm and have a variety of options to satisfy their requirements and wants. The main things to take into account are mall location, mall trade area, size, and parking facility. The researcher discovered that there is ample room for further research in this area after conducting a thorough evaluation of the literature.

Indian retail market is estimated to be US$ 1200 billion and stands one of the top five retail markets in the world by economic value and the Indian E-commerce industry stands at $84 billion. With the emergence of e-Commerce, people can now buy goods, pay bills, or transfer money in just one click through E-Commerce. It is evident that customer these days are adopting E-commerce for Sales & purchase of goods and services because of its advantages over the Traditional methods. Earlier studies have only concentrated on one or two fields, primarily the garment and food industries. Additionally, there are very few studies that address all the significant factors, such as cell phones, groceries, cosmetics, etc. Due to this, this work mainly focus on consumer behaviours towards market trend whether they will adopt E-commerce or prefer traditional marketing for their various needs with different sectors in this study. The main objective of this work is to examine detailed information related to consumer behaviour pertaining to 11 categories of products using various factors that influence his decision of buying products through Traditional Brick & Mortar stores and E-Commerce.

Nature of Study

The research would be descriptive, exploratory, analytical and comparative in nature because the study necessitates in-depth understanding and data analysis.

Study Area

The current study was conducted in Delhi and the NCR region. National Capital region has the major portion of interstate migrants in its overall population among of all the states of the country. NCR has fascinated residents from all across the nation, and its people represents characteristics of all the sections of India. NCR cultural life displays an exceptional

fusion of traditional and modern elements. Delhi & NCR is a melting-pot of various regions, religions, class, economic-strata, income levels and urban & rural backgrounds. This amalgamation of fusions presents a perfect setting for a well-diversified research scenario. The researcher hence chose Delhi & NCR region for the survey.

Sources of Data

The data is compiled using both primary and secondary sources. Primary Data was acquired from the respondents via personal interviews and a self-structured questionnaire. Secondary information was gathered from a variety of sources, including websites, online and offline annual reports, periodicals, journals, newspapers and theses. It was ensured during the study that the data that is being collected includes all the classes, from lower, middle, upper middle, and elite.

Sample Size

For the research study, a sample size of 550 people was intended, but 28 respondents' responses were found invalid. Thus, 522 people will make up the sample size for analysis.

Data Collection

Numerous in-person interviews with consumers (both Offline and Online), retailers, and corporate employees were conducted followed by a survey for the purpose of data collection was done through a comprehensive questionnaire in Delhi & NCR region. The survey was conducted both by In-person Questionnaire filling and through Google Sheets. Besides the Demographics, profiles and Shopping trends, the Questionnaire covers 11 categories of various products with 7 factors which effect buying behaviour each in online and offline mode of selection.

4. Data Analysis

A non-parametric test called the Chi-Square goodness of fit test is used to determine whether the observed value of a given phenomenon differs considerably from the expected value. In the Chi-Square goodness of fit test, the term "goodness of fit" refers to the relationship between the observed sample distribution and the predicted probability distribution. It analyze for all 11 categories.

Both Online & Offline Respondents have shared their opinions regarding various factors that influence their buying patterns. Researcher has analyzed various factors. that influence buyers to take a decision to purchase products for the following 11 categories:

1) Daily Grocery Essentials

2) Monthly / Weekly Grocery

3) Clothing (Apparels) / Shoes

4) Food

5) Accessories

6) Cosmetics

7) Electronic Devices

8) Books & Magazines

9) Movie & Entertainment

10) Travel Arrangement

11) Computer / Hardware & Mobile Handsets.
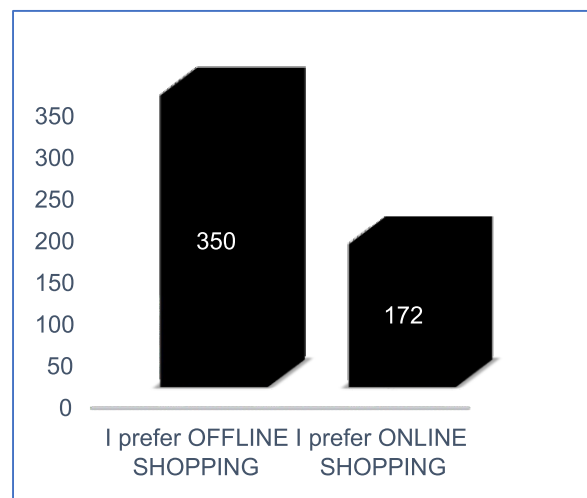
a) Daily Grocery

b) Monthly / Weekly Grocery Items

c) Clothing (Apparels)

Bar chart with "I prefer OFFLINE SHOPPING (Eg." = 302 and "I prefer ONLINE SHOPPING (Eg. M" = 220

f) Cosmetics

Bar chart with "I prefer OFFLINE SHOPPING" = 326 and "I prefer ONLINE SHOPPING" = 196

d) Food

Bar chart with "I prefer OFFLINE SHOPPING" = 218 and "I prefer ONLINE SHOPPING" = 304

g) Electronic Devices

Bar chart with "I prefer the OFFLINE SHOPPING" = 280 and "I prefer the ONLINE SHOPPING" = 242

e) Accessories

Bar chart with "I prefer OFFLINE SHOPPING" = 326 and "I prefer ONLINE SHOPPING" = 196

h) Books & Magazines

Bar chart with "I prefer OFFLINE SHOPPING" = 236 and "I prefer ONLINE SHOPPING" = 286

i) Movies & Entertainment

j) Travel Arrangements

5. Findings

To analyze and conclude the factors influencing consumer behaviour most, factors with 70% and above (3.5 and above mean out of 5) have been taken into consideration. Table 1 shows the major influencing factors both for Online and Offline categories.

For Daily Grocery Online category, responses suggest that "Time Saving / Ease of Order placement" factor has the highest score of 3.79 followed by "I can update orders till night" with 3.62 score and "Option of Scheduling future deliveries" with 3.56. Offline Customers for Daily Grocery are getting influenced by four factors like "fresh products" with 3.85 score followed by "I can touch and feel the products before buying" (3.76 score), "Better quality (3.68 score) and "Trust & comfort of Local vendor" with 3.58 mean score.

Online buyers for Monthly/Weekly Grocery category is majorly influenced by 4 factors i.e. Time Saving / Ease of Order placement (3.97 mean value), "Offers & Discounts" (3.81 mean value), "Brand /Product variety" (3.7 mean value) and lastly "Return policy" with 3.65 mean value. Whereas Offline buyers are influenced by factors like "Fresh Products" (3.81 mean value) and "Product variety" with 3.73 mean value.

Responses from Respondents for Online Clothing Category suggest that they are getting influenced majorly by four factors i.e. "Return policy" (3.89 mean value), "Offers & Discounts" (3.85 mean value), "Brand /Product variety" (3.84 mean value), Time Saving / Ease of Order placement (3.8 mean value) and lastly "Online reviews help me to make a better purchase" with a mean value of 3.79. For Offline respondents in Clothing category, factors that influence customers are "I can touch and feel the products while shopping offline" (4.15 mean value), "Trial facility available" (4.12 mean value) an lastly "Clarity of Size & Color" with a mean value of 4.09.

Food Online category purchases are majorly influenced by three factors i.e. "Time Saving / Ease of Order placement" (3.99 mean value), "Offer & Discount" (3.9 mean value) an lastly "Online reviews help me to make a better purchase with a mean value of 3.49. Offline respondents for Food are getting influence by "I prefer fresh & immediately cooked food" (3.95 mean value), "Feel good factor" (3.9 mean value), "I prefer group celebration outside home" (3.74 mean value) and lastly Ambience of the place with 3.7 mean value.

Factors that influence buyers of Accessories in Online category are "Brand /Product variety" (3.8 mean value), "Return policy" (3.73 mean value), "Time Saving / Ease of Order placement" (3.72 mean value), "Offers & Discounts" (3.66 mean value) and lastly "Online reviews help me to make a better purchase" with 3.64 mean value. For Offline customers of Accessories category, "Trial facility available" (4.13 mean value), "I can touch and feel the products while shopping offline" (4.11 mean value), "Clarity of Size & Color" (4.08 mean value), "Better Quality / Originality" (3.96 mean value) and lastly "Trust & comfort of Local vendor" with a mean value of 3.73.

For Online Cosmetic category influencing factor are "Brand /Product variety" (4.04 mean value) "Time Saving / Ease of Order placement" (3.95 mean value), "Return policy" (3.93 mean value), "Online reviews help me to make a better purchase" (3.92 mean value) and lastly "Offers & Discounts" with a mean value of 3.89, whereas factor for Offline Cosmetic category are "Clarity of Fragrance & Color" (3.94 mean value), "I can touch and feel the products while shopping offline" (3.94 mean value), "Trial facility available" (3.93 mean value), "Better Quality / Originality" (3.87 mean value), and lastly "Trust & comfort of Local vendor" with mean value of 3.68.

In Electronics Category, influencing factors are "Offers & Discounts" (3.99 mean value), "Return policy" (3.94 mean value), "Time Saving / Ease of Order placement" (3.92 mean value), "Brand /Product variety" (3.89 mean value), "and lastly "Online reviews help me to make a better purchase" with a mean value of 3.81. In Offline category for Electronic Devices, "I can touch and feel the products" (4.07 mean value), "Clarity of Size & Color" 3.99 mean value), "Assurance of after sales service" 3.94 mean value), "Better Quality / Originality" 3.94 mean value), "and lastly "Trust & comfort of Local vendor" with a mean value of 3.91 are the influencing factors.

In Books category , factors that influence Online buyers are "Time Saving / Ease of Order placement (3.97 mean value), "Return policy (3.97 mean value), "Online reviews help me to make a better purchase (3.92 mean value), "Brand /Product variety (3.91 mean value), and lastly "Offers & Discounts" with a mean value of 3.9.. For Offline Books & Magazine category, influencing factors are "I can touch and feel the products" (3.82 mean value), "Trust & comfort of Local vendor" (3.76 mean value), "Brand /Product variety" (3.72 mean value), "Better Quality / Originality" (3.71 mean value), and lastly "I can check Testimonial/Endorsements from experts available inside the books" with a mean value of 3.64.

Factors that influence Online buyers of Movies & Entertainment (Ticket booking) are Confirmation about Ticket availability (4.26 mean), Time Saving (4.24 mean), I can plan & book in advance (4.24 mean), and lastly "Ease of booking" with a mean of 4.18. In Travel Arrangement booking, influencing factors are "Time Saving" 4.13 mean value), "Comparison of options /prices" (4.12 mean value), "Ease of booking" (4.11 mean value), "Offers & Discounts" (3.95 mean value), "Cancellation policy availability" (3.9 mean value), and lastly "Online reviews help me to make a better purchase" with a mean value of 3.87. Trust & comfort of Local vendor with 3.83 mean is the only factor that influence Offline category for "Travel Arrangements bookings".

In the eleventh and the last Category i.e. Computer, Mobile Handsets, factors influencing Online purchases are "Time Saving / Ease of Order placement" (3.98 mean value), "Offers & Discounts" (3.97 mean value), "Brand /Product variety" (3.95 mean value), "Return policy" (3.93 mean value), and lastly "Online reviews help me to make a better purchase" with a mean value of 3.87. For Offline purchases, influencing factors are "I can touch and feel the products while shopping offline (4.16 mean value), "Clarity of configuration (4.09 mean value), "assurance of after sales service (4.09 mean value), "Trust & comfort of Local vendor (4.08 mean value), and lastly "brand /product variety" with a mean value of 4.06.

Table 1: Factor Influencing Consumer Behaviour While Buying Various Products Online And Offline by Overall Mean Factor

Category	Best Factor	Best Factor Mean Value	Best Factor response	Over-all Mean	Over-all Response
Online	Time Saving / Ease of Order placement	3.79	Agree	3.424	Agree
Offline	Fresh Products	3.85	Agree	3.291	Neutral
Online	Time Saving / Ease of Order placement	3.97	Agree	3.53	Agree
Offline	Fresh Products	3.81	Agree	3.54	Agree
Online	Return policy	3.89	Agree	3.684	Agree
Offline	I can touch and feel the products while shopping offline	4.15	Agree	3.568	Agree
Online	Time Saving / Ease of Order placement	3.99	Agree	3.363	Neutral
Offline	I prefer fresh & immediately cooked food	3.95	Agree	3.423	Agree
Online	Brand /Product variety	3.8	Agree	3.589	Agree
Offline	Trial facility available	4.13	Agree	3.631	Agree
Online	Brand /Product variety	4.04	Agree	3.779	Agree

Offline	Clarity of Fragrance & Color ; I can touch and feel the products while shopping offline	3.94	Agree	3.5	Agree
Online	Offers & Discounts	3.99	Agree	3.701	Agree
Offline	I can touch and feel the products while shopping offline	4.07	Agree	3.608	Neutral
Online	Time Saving / Ease of Order placement ; Return policy	3.97	Agree	3.748	Agree
Offline	I can touch and feel the products while shopping offline	3.82	Agree	3.433	Agree
Online	Confirmation about Ticket availability	4.26	Strongly Agree	3.99	Agree
Offline	Online booking charges make cost high	3.33	Neutral	2.809	Neutral
Online	Time Saving	4.13	Agree	3.906	Agree
Offline	Trust & comfort of Local vendor	3.83	Agree	3.167	Neutral
Online	Time Saving / Ease of Order	3.98	Agree	3.767	Agree

Offline	placement I can touch and feel the products while shopping offline	4.16	Agree	3.704	Agree

Other Findings

- For this survey, a total of 36% of people between the ages of 36 and 45 took part.

- From an educational background, a maximum of 56% of people are postgraduate. It means highly qualified people providing time for this survey so that it can be genuinely analyzed.

- Professionally, approximately 43% of people work in the private sector, while approximately 43% of people earn more than 1 L per month.

- In this survey, 68% of males participated while the rest were females. Also, 67% of the people who participated were married.

- The people who provide responses are mostly from urban areas; 89% are fromurban areas while only 11% are from rural areas.

- 89% of people prefer both online and offline modes as a mode of purchase, while only 43% of people spend 10–20% of their income on monthly shopping.

- Of total income spent on monthly shopping, only less than 10% of that amount is preferred by 39% of people for online shopping.

- In terms of ability to perform online shopping, 57% are skilled, which is a good number considering that 48% have been doing online shopping for more than 4 years.

- 42% of people prefer online shopping occasionally once or twice a month, and 50% of people are satisfied with online shopping.

Table 2: Analysis based on Preference of Consumer towards Online and offline Stores

Category	Web Stores	Traditional Stores
Daily Grocery	Grofers/Blinkit (37%)	Nearby Market/Kiryana Store (71%)

Category	Web Stores	Traditional Stores
Daily Grocery	Grofers/Blinkit (37%)	Nearby Market/Kiryana Store (71%)
Monthly/Weekly Grocery	Amazon (50%)	Nearby Market/Kiryana Store (59%)
Clothing	Myntra (49%)	Multi Brand Dept Stores (42%)
Food	Zomato (61%)	Fine Dining Restaurants (43%)
Accessories	Amazon (57%)	Authorized Company Showrooms (48%)
Cosmetics	Amazon (41%)	Multi Brand Dept Stores (43%)
Electronic Devices	Amazon (69%)	Authorized Company Showrooms (39%)
Books & Magazines	Amazon (82%)	Book Shops (47%)
Movies & Entertainment	Bookmyshow (73%)	Multiplex (74%)
Travel Arrangements	MakeMyTrip (77%)	Instant booking over Counter (46%)
Computer/Mobile Handset	Amazon (74%)	Authorized Company Showrooms (49%)

Besides studying the consumer behaviour while making both offline & online purchases for 11 prominent product categories, researcher has also analyzed the places where customers prefer to shop. Through the questionnaire, respondents were questioned about the different places or websites wherein they prefer to shop Offline or Online respectively as shown in above table.

Customers prefer Grofers/Blinkit while shopping Daily Grocery Essentials through online mode and 71% respondents prefer to shop from Nearby Kiryana stores. For Monthly Grocery purchases also, customers prefer nearby kiryana stores though the percentage is 59% and is comparatively less to Daily Grocery essentials. Amazon is the preferred site for Online purchases of monthly Grocery items. Myntra is the preferred site for the customers who prefer to purchase Clothes and on the other hand people prefer to shop from Multi-brand outlets when shopping offline. Zomato is the most preferred site for consumers who prefer to order food online and 43% respondents prefer to eat in Fine Dining restaurants. Amazon is the most preferred site for consumers who purchase Accessories online and 48% of offline respondents have chosen Authorized Company Showrooms. 41% of the Online respondents prefer to purchase cosmetic items from Amazon and 43% respondents chose Multi Brand Departmental Stores as their Offline choice. Events like The Great Indian Sale on Amazon seems to be clicking well as 69% respondents purchase Electronic devices while doing online shopping, while Authorized Company Showrooms is preferred place of shopping for offline customers. More than half of the respondents had opted Online to be the preferred mode of purchase for Books and Magazines and 82% of these respondents are purchasing books and magazines from Amazon while Offline buyers prefer to purchase them from Book shops only. Among various available options like Book My Show, PVRCinemas.com, Paytm Mall, Ticket Please etc., 73% Online respondents preferred to purchase tickets from Book my Show. 73% of online respondents preferred to make Travel arrangements through Make my trip while 43% of the offline respondents prefer to make instant booking over the counter only. People have started preferring purchasing Computers and Mobile Handsets online, as more than half of the respondents have preferred Online as the preferred mode of purchase and 74% of these respondents purchase Computers and Mobile Handsets from Amazon. Almost half of the offline purchasers prefer Authorized Company Showrooms for purchases.

7. Conclusion

Brick and mortar are usually referred to as the conventional building materials, but nowadays, this term is used as a connotation to mean "old-fashioned business model." Any retail store with a physical location offering products and services to

its customers is termed a "Brick-and-Mortar Store" (B&M). Prior to the evolution of e-commerce, most of the business activities were carried out at these brick-and-mortar stores. The retail industry in India is segmented into organized retail and unorganized retail. The retail industry is highly competitive as it is majorly dominated by unorganized retailers. Approximately 13 million kiryana and neighbourhood outlets sell food and consumables. Ecommerce is basically commercial transactions conducted electronically on the Internet. It is the process through which the buying, selling, dealing, ordering, and paying for goods and services are done over the internet. These transactions can be done in four ways: Business to Business (B2B), Business to Customer (B2C), Customer to Customer (C2C), and Customer to Business (C2B). This work mainly focuses on the study of ecommerce vs. traditional commerce with reference to consumer behaviour from brick to click. In this work, the questionnaire survey-based research design has been used for the research. On the basis of various factors also it can be concluded that E-commerce is replacing the charm of traditional stores. By using Chi-Square Test, researcher used several factors to analyze the impact of online stores over traditional stores. In this section a discussion on acceptance and rejection of hypothesis of the study is being presented. Various sub factors considered under customer oriented aspects are customer age, gender, marital status, family type, and family size, educational background of customers, occupation, and income and reference groups.

The objective is to study the various factors influencing consumer behaviour while buying various products online and offline. Both online and offline shopping habits are looked at, such as how online shopping saves time and makes it easy to place an order, if you can schedule future deliveries, if the quality is better, if there are deals and discounts, if I can change my orders late at night, if the products are fresh, etc. A total of 11 factors have been studied for consumer preferences for buying either online or offline. People prefer the offline mode of purchase in six categories, while they prefer online for the other 05 categories. Hence, they reject all null hypotheses.

In future scope, there are several areas in need of further research. There is still great scope for other researchers to further study in the same area. In this research, the researchers included the Delhi/NCR area only, but considering the wide scope of work, other researchers can consider different towns and cities or even the country as a whole. There is a vast scope of further research in analysing how online and traditional stores can improve their efficiency and effectiveness at different levels.

Selling goods and services to make money is the same purpose of both traditional and online commerce, they go about it very differently. Digital shopping is undoubtedly the way of the future. Despite the fact that more people are shopping online

and that this trend has been growing over time, brick and mortar establishments like neighbourhood kiryana outlets, supermarkets, convenience stores, and shopping malls are still very much in use today. On the contrary, both mediums will continue to flourish to new heights. No matter how shopping evolves, it's crucial to keep in mind that some factors, such as paying attention to data and data analysis, building individualized relationships with your clients and customers, and having efficient business management, will always be crucial.

8. References

- Alwani A, Yadav S, (2021), "A Study of Consumer Behaviour towards online shopping in Vadodara City", International Journal of Creative Research Thoughts (IJCRT), Volume 9, Issue 5.

- Andersone I., Sarkane E., (2016), "Behavioral Differences In Consumer Purchasing Behavior Between Online and Traditional Shopping: Case Of Latvia", Economics & Management.

- Aryani D, Nair R, Hoo D., (2021), " A Study on Consumer Behaviour: Transition from Traditional Shopping to Online Shopping During the COVID-19 Pandemic", International Journal of Applied Business and International Management, Vol. 6 No. 2, 81-95

- Ashari A., & Miranda M., (2010), "Consumer Attitude and Intention to Buy Organic Food as a Result of Brand Extension: An Experimental Approach", International Conference on Management Science & Engineering, 503-511.

- Banu A., Rani M., (2014), "A Study On Customer Preference Towards Online Shopping With Special Reference To Tiruchirappalli District", International Journal of Advanced Research in Management and Social Sciences, Vol. 3 , No. 5, pp. 205-214.

- Chenglin S., Xinxin Z., (2009), "A Supply Chain Model with a Dual Distribution Channel Based on Consumer's Behaviour Diversity in the E-market", International Conference on Electronic Commerce and Business Intelligence, 491-494.

- Clemons E, & Jin F, (2012), "The Special Challenges of Ecommerce in China: A Preliminary Investigation of Sufficient Conditions for Generating Adequate Consumer Trust For Initial Launch, Hawaii International Conference on System Sciences, pp. 4562-4571.

- Daroch B., Nagrath G., (2020), " A study on factors limiting online shopping behaviour of consumers", Rajagiri Management Journal Vol. 15 No. 1, pp. 39-52

- Dou X., (2020) "Online Purchase Behavior Prediction and Analysis Using Ensemble Learning, IEEE 5th International Conference on Cloud Computing and Big Data Analytics, pp. 532-536.

- Eroğlu E., (2014), "The Changing Shopping Culture: Internet Consumer Behavior", Review of Business Information Systems, Volume 18, Number 1.

- Fernandes C., Tharakan A., (2021), "Factors Influencing Consumer Buying Behaviour Towards E-Commerce Websites", Journal of Emerging Technologies and Innovative Research, Volume 8, Issue 7.

- Gupta N., Jain R., (2017), " Consumer Behavior Towards E-Commerce: Online Shopping", International Journal of Science Technology & Management, Vol 6, Issue 3.

- Harvey, B., (2001), Measuring the effects of sponsorships. Journal of advertising research, 41(1), pp.59-59.

- Hendra H. & Ginting P., (2017), "Impact Of eCommerce Service Quality, Recovery Service Quality, And Satisfaction In Indonesia, International Conference on Sustainable Information Engineering and Technology (SIET), pp. 35-40.

- Hitmi H, (2020), "A Transition from Brick-and-Mortar to Online Stores and Its Role in Shifts in Consumer Buying Patterns", Psychology And Education, 375-381

- Jalaldeen M. & Sarabdeen S., (2019), "Influencing Factors of Social Commerce Behavior in Saudi Arabia, International Conference on Sustainable Information Engineering, Vol 3, Issue 5.

- Jimenez D. & Valdes S., (2019) "Popularity Comparison between E-Commerce and Traditional Retail Business", International Journal of Technology for Business (IJTB), pp. 10-16.

- Kaur S, Kaur V, (2018), " Comparative Study On Online Vs. Offline Shopping", International Journal of Creative Research Thoughts, Volume 6, Issue 1, pp. 1460-1470.

- Kaushik A, Singh S, (2013), "A study of Relationship between consumers' online shopping and/or purchasing experience and their intentions to purchase from their favorite products/items websites", International Conference on Emerging Trends in Engineering and Management, Vol.3, 134-141.

- Kavitha H & Ravikumar P., (2019), "Online Shopping Customer Behavior Analysis using centrality measures", International Conference on Advances in Information Technology, pp. 223-227.

- Kumar A, (2015), "Consumer Behavior on Traditional and Online Shopping", International Journal of Engineering, Management & Sciences, Volume-2, Issue-5, pp. 01-04.

- Lakshmi. S, (2016), "Consumer Buying Behavior Towards Online Shopping", International Journal of Research, Vol.4, Iss.8, 60-65.

- Lingling X,, (2010), "Study on the Situation and Development mode of Ecommerce in China, IEEE Access Journal, pp. 387-390.

- Lingling X., Linhai W., (2009), "The Application of E-commerce in Food Traceability System", Nation Soft Science Project of China, 01-04.

- Liu M., Xiao Y., (2006), "Simulation on the Consumer Innovation Diffusion Behaviour in the Environment of Electronic Commerce", International Conference on Electronic Commerce and Business Intelligence, 483-488.

- McDaniel, S.R., (1999). An investigation of match-up effects in sport sponsorship advertising: The implications of consumer advertising schemas. Psychology & Marketing, 16(2), pp.163-184.

- Meenaghan, T., (2001). Understanding sponsorship effects. Psychology & marketing, 18(2), pp.95-122.

Non-performing Assets Crisis In The Indian Banking Industry-An Analysis of Recent Trends In Selected Banks

Dr. Ajay Jain *
Shruti Bansal **
Dr. Shobha Bhardwaj ***

Abstract

Non-Performing Assets (NPAs) have rattled the whole banking industry's financial condition by a large amount. This condition hindered the supply chain at the macro level by affecting resource generation. These circumstances aided researchers in framing their study objectives, which are- to discuss NPA trends in leading public & private banks, explore the best NPA recovery tool like Lok Adalat, Debt Recovery Tribunals (DRTs), Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 (SARFAESI Act). The uses a total of six banks private and public to acquire secondary information for this descriptive nature study. The hypothetical assumptions were examined by using Tukey's HSD test and One-Way ANOVA. The data analysis findings revealed a great difference in the trends of selected variables from public and private banks. SARFAESI Act has been found a potent tool for recovering NPAs in India but it is insufficient to handle all NPA issues. As a result, banks should conduct comprehensive credit assessments to reduce the NPAs problem.

***Keywords:** Non-Performing Assets, Debt Recovery Tribunals, SARFAESI Act, NPA, Lok Adalat, Banking.*

1. Introduction

Banks are the foundation of growth and prosperity in the economic development of any country. In today's time, many Non-Performing Assets (NPAs) gathered in comparison to earlier because the banking sector has to face many difficulties to recover the NPAs from their defaulters. The reputation of sustainable practices and corporate social responsibility has grown as a result of the impact of corporate activities on the environment and social responsibility (Raj, Bansal, et al., 2018). NPAs have a severe effect on bank balances and savings and negatively impact the economy. While banks have become increasingly profitable in terms of increased revenues, attracting foreign capital, and diversifying their activities, they are also grappling with severe concerns such as deteriorating asset quality, insufficient capital, and stressed balance sheets (Raj et al., 2018). The banking sector has been wracked with problems in recovering bad debts from borrowers(Jain & Shaardha, 2016). Investor behaviour is a field that incorporates micro-level (individual and collective decision-making) psychology with a macro-level perspective to try to understand and explain investor behaviour (i.e., the role of financial markets)(Agarwal et al., 2021). A balance sheet is a statement of

an organization's financial situation at a specific point in time. The profit and loss account indicates a company's net profit or loss over a specific period (Raj, Bansal, et al., 2018). In a service industry like banking, the relationship between customer satisfaction and service quality is crucial (Raj & Bansal, 2019).

NPAs are of four types: Standard Assets- When the creditor consistently and timely pays his dues to banks, Sub-Standard Assets means assets that continue to exist as NPA equal to or less than 12 months, Doubtful Asset means NPA stayed for 12 months or more and Loss Assets are "uncollectible" or has less value than its continuity as a bankable asset is not possible (Non-Performing Assets (NPA) - Definition, Types & Examples, n.d.). In comparison to other Asian economies, India is emerging as the next great investment destination (Raj et al., 2018).

Lok Adalat was established by the Legal Services Authority Act of 1987. "People's Court" is another name for it. The mock court of the State Authority, known as Lok Adalats, is a type of Lok Adalat. The first Lok Adalat was established in Gujarat on March 14, 1982. Lok Adalat enables banks to resolve debt repayments through an agreement between the lender and defaulting borrowers. Debt recovery tribunals are permitted to constitute

* Associate Professor, Faculty of Management, SRM Institute of Science & Technology, NCR Campus, Modinagar, India (201204)
Email id: ajayjain.srm@gmail.com
** Visiting Faculty, Faculty of Management, SRM Institute of Science & Technology, NCR Campus, Modinagar, India (201204),
Email id: shruti.bansal0702@gmail.com
*** Assistant Professor, School of Management, Institute of Management Studies Ghaziabad (University Courses Campus), Adhyatmik Nagar, NH-09 Ghaziabad, U.P., India (201015),
email id: shobha.bhardwajmba@gmail.com

the Lok Adalat to make decisions on NPA matters. DRT stands for Debt Recovery Tribunal. In this regard, the DRT Act established Debt Recovery Appeal Tribunals (DRAT). This statute established a framework for creditors and lenders to quickly pay and return loans owed to them. The defaulter's accusations against the Secured Creditor's suit brought under the Sarfaesi Act are authorized to be heard by DRT. The DRTs were established in India by the Parliament Act (Act 51 of 1993) for the government's quick recovery of NPAs from banks. SARFAESI stands for Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest. The SARFAESI Act was signed into law on June 21, 2002, after the bill was adopted as an ordinance.

The main objective of this descriptive research study is to compare the trends of NPA in selected leading banks and to find out the effectiveness of SARFAESI ACT, 2002 by comparing with Lok Adalats and Debt Recovery Tribunals (DRTs). After this research, researchers expected that banks would be able to improve their financial position and increase their loan revenue by following the results of this study. The study also provides recommendations for banks on how to prevent and minimize current and potential NPAs.

1.1 Historical Backdrop

1.1.1 Rise of NPAs

Observers have argued that a successful financial system allows for an easy flow of reserve funds. The objective of this study is to grasp the definition of NPA, how it can be recovered via different methods, and to identify the impact of NPAs on the profitability of banks. The study concluded that NPAs are a key factor that has harmed India's financial sector (Wadhwa & Ramaswamy, 2020). (Narang & Khatkar, 2019) Indian banks are crucial indicators for the Indian economy's growth and financial stability. This study investigated NPA patterns in Indian Scheduled Commercial Banks and their recovery trends. The study concluded that NPAs generates a vicious cycle that can affect the banking sector and could result in a global crisis.

1.1.2 NPAs in Indian Banking Industry

NPAs are always considered a major problem for the Indian banking sector. It results in the accumulation of NPAs and a decline in NPA recovery results in low fund recycling, which directly affects bank lending decisions. The objective of the study is to investigate how NPAs can be recovered via various channels and it concluded that after increasing the number of DRT centers, NPA recovery improved (Alamelumangai & Sudha, 2019). Assets that generate revenue are known as performing assets, and those that do not generate revenue are known as Non-Performing Assets. The research aim is to investigate the state of non-performing assets owned by Indian scheduled commercial banks and to investigate the effect of NPAs on

banks. The research concluded that due to the shortage of funds caused by NPAs, the bank is unable to provide loans to new customers (Rathore et al., 2016).

1.1.3 Comparison of NPAs between Public and Private Banks

The banking system is critical to the growth of every economy. Private and public sector banks play a significant role in India's banking sector. The objective is to look into the various causes of NPAs as well as the trends in NPAs in the banking industry. The study concluded that a decrease in NPAs helps to increase the operational performance of banks (Pandey, 2018). NPA is a critical metric for evaluating the efficiency of financial institutions and it evolved into a method for analyzing the benefits in both private and public banks. This paper primarily focuses on the NPA comparison between public and private sector banks. This study also highlighted the reasons behind the consistent growth of NPAs. Lastly, researchers suggested that to minimize NPAs, banks should carefully assess their customer-related decisions to whom they are lending capital (Arora & Goyal, 2017).

2. Methods

2.1 Research Gap- The majority of the research has been conducted to identify the causes, effects, and management of NPAs. Although several studies have been conducted on NPAs, any study has not worked on the data of this certain duration i.e. from 2011 to 2020. This duration is very significant and relevant because drastic changes have been observed after the wake of the 2008 financial crisis. A lack of comparative analysis in trends of NPA in the last ten years in public and private sector banks motivated researchers to select this topic. A study conducted by Alamelumangal and Sudha in 2019 is also based on using the time frame of 2005-2017 and the efficacy of Lok Adalat, DRTs, and Sathe RFAESI Act, which was taken as a base for this research.

2.2 Data Extraction- Researchers have used secondary forms of data for conducting the study from many places such as reputed journals, yearly reports of banks, bank's websites and books, etc., of the last 10 years i.e. 2011-2020. A total of six private and public sector banks have been considered as sampling units in this study, whose data has been taken from reliable online websites such as rbi.org.in. The selected banks for this study are Industrial Credit Investment Corporation of India Bank (ICICI), State Bank of India, Punjab National Bank, Bank of Baroda, Housing Development Finance Corporation Bank (HDFC), and Axis Bank.

2.3 Statistical tool: One-Way Anova has been used in this study to match the means of two or more samples. Since here sample size is more than two, One-Way Anova is used in the study to compare means. Tukey's Honestly Significant Difference Test is also used in the current study to identify the differences that

occurred between the groups. This is also known as the posterior test, which means that they are performed after an event like One Way Anova when the null hypothesis is rejected. In this test, different pairs of means are compared and checked which pair is/are significantly different from others.

2.4 Hypotheses:

H1: There is a significant difference in trends of the percentage of Gross NPAs of Public and Private Banks.

H2: There is a significant difference in trends of the percentage of Net NPAs of Public and Private Banks.

H3: There is a significant difference in the method of recovery of Non-Performing Assets using Debt Recovery Tribunals, Lok Adalats in comparison with the SARFAESI act.

3. Results

The data analysis part has been discussed by researchers in parts based on the objectives used in this study.

3.1 In the first part, researchers have discussed whether the trends of the percentage of Gross NPAs, percentage of Net NPAs, and percentage of Return on Assets are significant or not in public and private banks by using One-Way Anova.

Table 1								
Percentage of Gross NPAs								
In Rs. Cr.	SBI	PNB	BOB	PUBLIC BANKS	HDFC	ICICI	AXIS	PRIVATE BANKS
2011	3.28	1.79	1.36	6.43	1.05	4.47	1.01	6.53
2012	4.44	2.93	1.53	8.9	1.02	3.62	0.94	5.58
2013	4.75	4.27	2.4	11.42	0.97	3.22	1.06	5.25
2014	4.95	5.25	2.94	13.14	1	3.03	1.22	5.25
2015	4.25	6.55	3.72	14.52	0.9	3.78	1.34	6.02
2016	6.5	12.9	9.99	29.39	0.94	5.21	1.67	7.82
2017	6.9	12.53	10.46	29.89	1.05	7.89	5.04	13.98
2018	10.91	18.38	12.26	41.55	1.3	8.84	6.77	16.91
2019	7.53	15.5	9.61	32.64	1.36	6.7	5.26	13.32
2020	6.15	14.21	9.4	29.76	1.26	5.53	4.86	11.65
2021	5.00	14.00	9.00	28.00	1.00	8.00	3.70	12.7
2022	4.00	12.00	7.00	23.00	1.00	4.00	2.82	7.82
MEAN				22.386				9.402
STD.DEV.				11.152				4.071

Table 2						
Anova- Single Factor						
Groups	Count	Sum	Average	Variance		
PUBLIC BANKS	12	268.64	22.386	124.374		
PRIVATE BANKS	12	112.83	9.402	16.580		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1011.532	1	1011.532	14.35252	0.001009	4.30095
Within Groups	1550.508	22	70.47763			
Total	2562.039	23				

INTERPRETATION- Public Banks have the highest mean value as 22.386 and the highest Standard Deviation as 11.152.

The F value is 14.35252 which is greater than the F Critical value of 4.30095, suggesting that alternative hypothesis H1 is accepted. As a result, it is inferred that the percentage of gross non-performing assets has a significant relation in Public and Private Banks.

Table 3								
Percentage of Net NPAs								
In Rs. Cr.	SBI	PNB	BOB	PUBLIC BANKS	HDFC	ICICI	AXIS	PRIVATE BANKS
2011	1.63	0.65	0.35	2.63	0.2	1.11	0.26	1.57
2012	1.82	1.52	0.54	3.88	0.2	0.73	0.25	1.18
2013	2.1	2.35	1.28	5.73	0.2	0.77	0.32	1.29
2014	2.57	2.85	1.52	6.94	0.3	0.97	0.4	1.67
2015	2.12	4.06	1.89	8.07	0.2	1.61	0.44	2.25
2016	3.81	8.61	5.06	17.48	0.28	2.67	0.7	3.65
2017	3.71	7.81	4.72	16.24	0.33	4.89	2.11	7.33
2018	5.73	11.24	5.49	22.46	0.4	4.77	3.4	8.57
2019	3.01	6.56	3.33	12.9	0.39	2.06	2.06	4.51
2020	2.23	5.78	3.13	11.14	0.36	1.41	1.56	3.33
2021	1.50	5.73	3.09	10.32	0.40	2.10	1.05	3.55
2022	1.02	4.80	1.72	7.54	0.32	0.81	0.73	1.86
MEAN				10.444				3.396
STD.DEV.				5.929				2.391

Table 4						
Anova- Single Factor						
Groups		*Sum*	*Average*	*Variance*		
PUBLIC BANKS	12	125.33	10.44417	35.15714		
PRIVATE BANKS	12	40.76	3.396667	5.719279		
ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	298.0035	1	298.0035	14.58071	0.000938	4.30095
Within Groups	449.6406	22	20.43821			
Total	747.6441	23				

INTERPRETATION- Public Banks have the highest mean value as 10.444 and a Standard Deviation as 5.929.

The F value is 14.58071 which is greater than the F Critical value of 4.30095, suggesting that alternative hypothesis H2 is accepted. As a result, it is inferred that the Percentage of Net NPAs of Public and Private Banks has a significant relation.

3.2 In the second part, researchers have discussed the methods of recovery of Non-Performing Assets using Debt Recovery Tribunals, Lok Adalats in comparison with the SARFAESI act by using Tukey-Kramer Test.

Table 5

NPA recovered by Scheduled Commercial Banks through various Channels (Amount in Crores)

YEAR	PARTICULARS	LOK ADALAT	DRTs	SARFAESI ACT
	No. of Cases referred	616018	12872	118642
2010-2011[1]	Amount involved	5254	14092	30604
	Amount recovered	151	3930	11561
	Percentage of Amount recovered	2.87%	27.89%	37.78%
	No. of Cases referred	476073	13365	140991
2011-2012[2]	Amount involved	1700	24100	35300
	Amount recovered	200	4100	10100
	Percentage of Amount recovered	11.76%	17.01%	28.61%
	No. of Cases referred	840691	13408	190537
2012-2013[3]	Amount involved	6600	31000	68100
	Amount recovered	400	4400	18500
	Percentage of Amount recovered	6.06%	14.19%	27.17%
	No. of Cases referred	1636957	28258	194707
2013-2014[4]	Amount involved	23200	55300	94600
	Amount recovered	1400	5300	24400
	Percentage of Amount recovered	6.03%	9.58%	25.79%
	No. of Cases referred	2958313	22004	175355
2014-2015[5]	Amount involved	30979	60371	156778
	Amount recovered	984	4208	25600
	Percentage of Amount recovered	3.07%	6.97%	16.33%
	No. of Cases referred	4456634	24537	173582
2015-2016[6]	Amount involved	72033	69341	80100
	Amount recovered	3224	6365	13179
	Percentage of Amount recovered	4.47%	9.19%	16.45%
	No. of Cases referred	2152895	28902	80076
2016-2017[7]	Amount involved	105800	67100	113100
	Amount recovered	3800	16400	7800
	Percentage of Amount recovered	4%	24%	7%
	No. of Cases referred	33,17,897	29,345	91,330
2017-2018[8]	Amount involved	45,728	1,33,095	81,879
	Amount recovered	1,811	7,235	26,380
	Percentage of Amount recovered	4.0%	5.4%	32.2%
	No. of Cases referred	40,87,555	51,679	2,35,437

[1] **NPAs of SCBs Recovered through Various Channels** (RBI, Publications, 2011)

[2] **NPAs of SCBs Recovered through Various Channels** (RBI, RBI BULLETIN, 2013)

[3] **NPAs of SCBs Recovered through Various Channels** (RBI, RBI BULLETIN, 2015)

[4] **NPAs of SCBs Recovered through Various Channels** (RBI, RBI BULLETIN, 2015)

[5] **NPAs of SCBs Recovered through Various Channels** (RBI, Publications, 2016)

[6] **NPAs of SCBs Recovered through Various Channels** (RBI, Publications, 2016)

[7] **NPAs of SCBs Recovered through Various Channels** (RBI, Publications, 2017)

2018-	Amount involved	53,484	2,68,413	2,58,642
2019[1]	Amount recovered	2,750	10,552	38,905
	Percentage of Amount recovered	5.1%	3.9%	15.0%
	No. of Cases referred	59,86,790	40,818	1,05,523
2019-	Amount involved	67,801	2,45,570	1,96,582
2020[2]	Amount recovered	4,211	10,018	52,563
	Percentage of Amount recovered	6.2%	4.1%	26.7%

Table 6			
Tukey-Kramer Procedure			
COMPARISON	**ABSOLUTE DIFFERENCE**	**CRITICAL RANGE**	**RESULTS**
LOK ADALAT VS DRTs	6.835	8.18	Not Different
			Means Significantly
DRTs VS SARFAESI ACT	11.116	8.18	**Different**
LOK ADALAT VS SARFAESI ACT			**Means Significantly**
	17.951	8.18	**Different**

INTERPRETATION- In the above table we found that the F calculated value is more than F critical value, suggesting that alternative hypothesis H4 is accepted.

---

[8] **NPAs of SCBs Recovered through Various Channels** (RBI, Publications, 2019)

[9] **NPAs of SCBs Recovered through Various Channels** (RBI, Publications, 2020)

[10] **NPAs of SCBs Recovered through Various Channels** (RBI, Publications, 2020)

Table 7		
Values		
LOK ADALATS	**DRTs**	**SARFAESI ACT**
2.87	27.66	37.91
11.76	17.01	28.61
6.06	14.19	27.17
6.03	9.58	25.79
3.16	6.97	16.33
4.47	9.19	16.45
4	24	7
4	5.4	32.2
5.1	3.9	15
6.2	4.1	26.7
SUM	**53.65**	**122**	**233.16**
MEAN	**5.365**	**12.2**	**23.316**
VARIANCE	**6.467028**	**69.92947**	**87.07512**

Table 8

Formula Values

Q	3.506
Numerator Degree Of Freedom	3
Denominator Degree Of Freedom	n-c=30-3=27
K	3
C	30
S square pooled	54.49054
N	10

INTERPRETATION- The difference between the Lok Adalat and SARFAESI Act recovery mechanisms is significant, i.e. 17.951 > p =8.18. Similarly, the gap in recovery mechanisms between DRTs and the SARFAESI Act is significant, i.e. 11.116 > p =8.1. Thus, the Mean Lok Adalat = 5.365 is lower than the Mean DRT = 12.2 which is lower than the Mean SARFAESI = 23.316 to determine the highly efficient unit. As a result, it can be concluded that the efficacy of Lok Adalat, DRTs, and the SARFAESI Act vary significantly.

4. Discussion

4.1 Findings

- The SARFAESI act is a powerful tool for recovering the NPAs in India.

- Liberal credit policies and loose loan terms and conditions, as well as shortcomings in credit sanctions and loan disbursements cause higher NPAs in PSBs.

- There is a rising number of bad loans in PSBs because of their social obligations.

- Public sector banks provide the majority of credit to businesses, and it is this segment of the credit distribution that accounts for the majority of NPAs. SBI offered a large loan to Kingfisher Airlines during their financial crisis, which they were unable to repay.

- The priority sector-lending (PSL) sector has made a significant contribution to NPAs. Agriculture, education, housing, and MSMEs are all priority sectors. According to SBI figures, education loans account for 20% of the bank's nonperforming assets.

- The suspension of mining projects and delays in obtaining environmental permits impacted the power, and steel industries resulting in increased volatility in raw material prices.

4.2 Suggestions

It is suggested by researchers that a proper credit assessment to track early warning signals about the projects like an effective Management Information System must be introduced. The bank's assessment techniques must be sharpened during the pre-disbursement stage. In the case of willful default, a personal visit and face-to-face conversation with the borrower should be done. In India, complete and detailed information on a bank's financial health is not disclosed. Annual 'stress testing' of banks by the RBI will be a smart idea. PSBs should carefully examine the Credit Information Bureau (India) Limited score of the borrower.

4.3 Limitations

This research is current situation-based and cannot forecast the situation of NPAs in the future, which is also one of the limitations of this study. Secondly, this investigation of this study over non-performing assets was restricted to Indian banks (six private and public sector banks) only and considered a limited sample size for data collection. This study used the information of banks only from 2011 to 2020.

5. Conclusion

It is summarized from the above analysis of data that NPAs are steadily increasing after taking certain measures by the government. Though SARFAESI Act is an efficient and effective tool to control NPAs, this act is not enough to manage the NPAs. In contrast to private banks, the number of NPAs are steadily increasing in public banks. To reduce their NPAs, banks can use proper credit assessment techniques. Banks should perform a post-money-sanction review to ensure that the funds are being put to good use. Customers and the general public lose confidence in banks that have a high rate of NPAs. The money spent by one person is the money earned by another. The more credit society has, the more economic activity there is in the industry. As a result, credit contributes to the growth of an economy. Banks and other financial institutions are in charge of generating credit and enhancing an industry's economic activity. To put it another way, the banking industry is the foundation of every economy.

6. References

- Agarwal, D. D. K., Bansal, S., Jain, A., & Jain, S. (2021). A Study on Investment Behavior of Individual Investors About Delhi-NCR. International Journal of All Research Education and Scientific Methods (IJARESM). http://www.ijaresm.com/a-study-on-investment-behavior-of-individual-investors-with-reference-to-delhi-ncr

- Alamelumangai, R., & Sudha, B. (2019). Recovery Of NPAs Through Debt Recovery Channels In Indian Banks - An Analysis. Restaurant Business, 118(8), 245–254. https://doi.org/10.26643/RB.V118I8.7683

- Arora, D. S., & Goyal, K. (2017). NPA of Public and Private Banks-A Comparative-Study. https://www.coursehero.com/file/88375735/22-NPA-of-Public-and-Private-Banks-A-Comparative-Studypdf/

- Jain, A., & Shaardha, C. (2016). The impact of SARFAESI Act 2002 in recovering the non performance assets in public sector banks: A study on recovery in SBI, CBI, CB, BOB and PNB (2008 to 2014). https://www.researchgate.net/publication/316827430_The_impact_of_SARFAESI_Act_2002_in_recovering_the_non_performance_assets_in_public_sector_banks_A_study_on_recovery_in_SBI_CBI_CB_BOB_and_PNB_2008_to_2014

- Narang, D. D., & Khatkar, K. (2019). Trends and recovery of NPAs in Scheduled Commercial Banks of India - RESEARCH REVIEW International Journal of Multidisciplinary. https://old.rrjournals.com/past-issue/analytical-study-on-internet-of-things-related-with-software-architecture-2/

- Non-Performing Assets (NPA) - Definition, Types & Examples. (n.d.). Retrieved April 16, 2022, from https://groww.in/p/non-performing-assets

- Pandey, S. (2018). NPA: A Study of Analyzing Trends in Banking Sector. 6(2), 1407. www.ijcrt.org

- Raj, M., & Bansal, S. (2019). CUSTOMER SATISFACTION IN BANKING SECTOR-A CASE STUDY OF H.D.F.C BANK. International Journal of Research and Analytical Reviews. http://ijrar.com/

- Raj, M., Bansal, S., & Kashyap, A. (2018). Financial Performance of I.C.I.C.I Bank- A Case Study of 2005-2009. 5(3), 247–255.

- Raj, M., Bansal, S., & Kashyap, A. (2018). IMPACT OF CORPORATE SOCIAL RESPONSIBILITY ON FIRM'S FINANCIAL PERFORMANCE-A CASE STUDY OF SOME INDIAN COMPANIES. EPRA Journal of Multidisciplinary Research (IJMR), 4(10).

- Raj, M., Jain, A., Bansal, S., & Verma, T. (2018). Non-Performing Assets: A Comparative Study of SBI & ICICI Bank from 2014-2017. IOSR Journal of Business and Management (IOSR-JBM), 20(9), 78–84. https://doi.org/10.9790/487X-2009077884

- Raj, M., Verma, T., Bansal, S., & Jain, A. (2018). Performance Of Mutual Funds In India : A Comparative Analysis Of SBI Mutual Funds And HDFC Mutual Funds. IOSR Journal of Business and Management (IOSR-JBM), 20, 36–43. https://doi.org/10.9790/487X-2010013643

- Rathore, S., Malpani, S., & Sharma, S. (2016). Non-Performing Assets of Indian Banking System and its Impact on Economy. IOSR Journal of Economics and Finance, 7(6), 21–26. https://doi.org/10.9790/5933-0706032126

- Wadhwa, R., & Ramaswamy, K. (2020). Impact of NPA on Profitability of Banks. International Journal of Engineering Technology and Management Sciences, 4(3), 1–8. https://doi.org/10.46647/IJETMS.2020.V04I03.001

Use of Multisensory Marketing by Retailers to Engage Shoppers

Dr. Rupa Rathee *
Dr. Pallavi Rajain **

Abstract

In an experiential economy, the focus of retailers is not just to provide quality products but also to provide a pleasant shopping experience. Therefore, retailers use several strategies to engage the customers. Important among these are the multisensory cues in the retail environment which appeal to the customers. Thus, the present study was conducted to develop a scale for retailers and study the multisensory cues implemented by retailers to attract the customers. The study was conducted at organized retail outlets in National Capital Region, India. The data was collected using survey questionnaire from salesperson and sales executives. The study helped to create a scale for assessing the impact of multisensory cues in retail from retailer's perspective. Further, the study results showed that among the four senses (sight, sound, smell and touch) that were studied, sight and touch were the most prominent.

***Keywords:** Multisensory Marketing, Senses, Retailer*

1. Introduction

Marketing is a social process that is constantly influenced by political, economic, cultural and technological forces. New conditions are created by these forces for both the firms and the customers. The increasing interest in sensory marketing can be explained by discussing these change forces that impact marketing. In the middle of 20th century, the societal development was measured in terms of social, economic and technological changes. However, post modernization, in the past three to four decades digital technology has been the force of change. Thus, this society can also be called "binary society" characterised by diversity, globalization and knowledge. The development of digital technology has influenced everyday life of firms and individuals. This has caused a shift from mass production to mass customization which is made possible by digital technology. In the present era, individualization in lifestyle in expressed clearly through the consumption pattern of individuals through which they form self-images. Individualization as lifestyle is expressed by three driving forces which include self-fulfilment, identity-creation, and sensory experience. Noteworthy among these is the sensory experience which is an expression of individualization and is dependent on

emotional as well as rational factors. Sensory marketing assumes a key job in how a brand is seen by people as for tactile encounters. In a globally competitive environment, a firm needs to strengthen and develop its strategic marketing. Thus, there was a need of transition from traditional marketing where focus is on attributes of product to where the focus is on product as an experience. This is the reason why it is necessary for firms to make use of five senses so that they can withstand the competition and grab the customer's attention (Hulten et al., 2009).

The growth of organized retail sector is largely due to retail marketing strategies which have been playing a very significant role. Retailers are applying various marketing strategies for attracting customers so that they buy from various retail formats that have emerged. The study by Mittal and Mittal (2008) suggested that the (i) shopping experience enhancers and (ii) loyalty programs were retail marketing strategist's two important sets of attributes. The shopping experience enhancers for shopping are: ambient conditions, guarantee, temperature (air conditioning), store reputation/advertisements, whereas the loyalty drivers are: sales promotions, recommendation, price, and attractive

* Associate Professor, Department Management Studies, Deenbandhu Chhotu Ram University Science and Technology, Murthal, Haryana, India
 Email: ruparathee18@gmail.com
** Assistant Professor, Department Management Studies, Deenbandhu Chhotu Ram University Science and Technology, Murthal, Haryana, India
 Email: pallavirajain1988@gmail.com

merchandise mix. Dalwadi et al. (2010) gave variables like "(i) courteous staff members, (ii) customer attention, (iii) free gifts and discounts, (iv) comfort and elegance, (v) proximity, (vi) variety, (vii) speedy service, and (viii) assurance" which must be kept under consideration while retail operations are designed. Various strategies were recommended (Grewal et al., 2009; Ghosh et al., 2010) for retailers explaining how they could shape customer behaviours and experiences by designing their stores in such a way that shoppers' expectations would be met.

The present study was conducted to study the various sensory cues applied by retailers and their perspective regarding the impact of these cues on the behaviour of customer in organized retail outlets.

2. Review of Literature

Sensory marketing has been effective in various environments especially retail environment. In the early eighties Millliman (1982) empirically assessed the influence of music on shopping behaviour inside a store. It was found that the tempo of music had significant influence on the pace of shoppers as well a sale of products. Again Milliman (1986) studied the effect of music on restaurant customers. Here too, the tempo of music affected the dining speed of the restaurant patrons. Clarke et al. (2012) explored the tactile experience of visitors of a little boutique. This study aimed to broaden understanding of the ways in which retail brand differentiation can be achieved rather than seeking explanation for the issues identified with experiential retailing and how it may be applied in the SME (small to medium sized enterprise). A little vintage woman wears retail business working in a specialty market limited in northwest of England was chosen as a solitary contextual investigation. On the basis of typicality of this case: a new way of life company in the fashion part was set up as an individual entrepreneurship. To look at the experience of the tangible retail condition of benefactors the study used photo-elicitation method. Photo-elicitation involves "inserting a photograph into the interview process" which was done to get responses from participant for the purpose of the current study. The study involved five participants were recruited successfully for participation in the study. A total of 5 follow-up interviews continuing for normally an hour were conducted where a total of five photographs were shown. The research objective was determining why the boutiques' patrons return repeatedly to that outlet. The findings showed that the same portion of the store where vintage garments were in plain view offered incredibly as far as giving an engaging, energizing and essential sensory experience. However, this was not the case with the main part of the store. The research illustrated that whilst shopping the women in the study (in the boutique) had a craving for a sensory experience. The contrast in both parts of the shop were easily identified by the participants, by the adjustment in attire as well as by the totally various

fragrances the customers were welcomed with after entering the various parts of the store.

Riedel and Mulcahy (2019) tried to find whether using an extra sense in addition to vision and audition can lead to more enjoyable experience. The additional sense used in this study included haptic touch through the use of interactive retail technologies. The study was conducted on 317 female participants who were randomly assigned to Haptic Touch (HT) and Non-Haptic Touch (NHT) conditions. The outcomes of the use of touch were assessed on the basis of perceived usefulness, ease of use, customer perceived value, satisfaction and purchase intentions. The results of the study supported the use of touch with the help of interactive technology. The results specifically suggested that use of touch with the help of interactive technology provides a more enriching and entertaining experience along with increased satisfaction levels. The results however did not suggest any significant increase in purchase intentions. Overmars and Poels (2015) studied touch experience in internet retailing environment. The authors conducted their study using an experimental setting in a controlled environment of a laboratory. They tried to find how the design elements of products presented online influenced the buyers emotionally. The variables under study included emotional responses towards products, touch sensations and attitude towards the products. Through the experiment it was found that customers with high autotelic NFT had a more favourable attitude towards the products. The research results also demonstrated that the instrumental NFT does not significantly influence the effect of presentation format on attitude towards product as well as the emotional response of customers.

Gonzalez-Benito et al. (2015) determined the use of brand in the form of substitute for touch in online retail environments. The study was conducted using an experimental design with pioneer versus non-pioneer brand, online versus disconnected channel and item classification with higher versus lower requirement for contact as the three conditions in which products were evaluated. The results revealed that top brands enjoyed advantage in consumer evaluation of quality irrespective of the attributes of the product. Moreira et al., (2017) built a model to explain how sensory stimulation influences purchase intentions of a brand. The authors conducted an online survey of 302 customers using convenience sampling. The results revealed that sensory incitement decidedly affected brand understanding and brand value, which, thusly, positively affected goals to buy the brand being referred to.

Cachero-Martínez and Vázquez-Casielles (2017) analysed relationships between the dimensions of experience, value and satisfaction. The experience dimensions included pragmatic, social, intellectual, sensory and emotional. The sample

comprised of 527 people from different cities of Spain and data was collected using personal as well as online surveys. The results of the study suggested that decisions related to product, price and promotion were affected by pragmatic experience which in turn influenced utilitarian value. It was found that emotional experience partially mediated relation between intellectual experience and hedonic value. Further emotional experience fully mediated relation between intellectual experience and satisfaction. Lastly, the results showed that besides emotional experience, hedonic value also depended on social and intellectual experience as well. Earlier, Martin (2013) in a sales experiment had tried to find how different auditory, visual and kinesthetic information influenced pricing decisions. It was found that with the addition of sensory information, the customers were willing to pay more for an item. Helmefalk (2016) discussed why congruence of sensory cues is important and why sensory cues are preferred over products, service and the image of the store. Four qualitative group discussions were conducted among 24 participants at a Swedish Ikea store. The results suggested that congruency acted as a mediator between the variables of the studies. This suggests that consumers prefer sensory cues that are in line with the products available at the store. Overall, the customers were of the opinion that a holistic perspective where sensory cues provided an appropriate level of fit to the store's image should be applied. Leenders et al. (2016) conducted a study in a real-world supermarket setting where they studied the effect of a congruent and ambient smell. In particular, the study aimed to find how scent intensity levels effected mood, behaviour and evaluations. The scent was applied using electrostatic aroma diffusers at different intensity levels. The study concluded that scent intensity mattered a lot. There were tremendous effects of scent on evaluations and behaviour at threshold conditions. Overall, the environment of the store, its evaluations, and store's merchandise had shown an improvement.

Sachdeva and Goel (2015) reviewed previous literature related to how retailers are finding new and innovative ways to attract customers to offline stores. The authors have focused on the paradigm that environment influences the mood of shoppers which in turn has an influence on their behaviour. It was found that in order to engage customers, the physical stores need to create such environments which strongly connect to shopper's emotions and thus have an emotional appeal for the brand. Similarly, Minh and Ly (2015) in their review article on use of sensory marketing in the retail sector discovered what sensory marketing is and why it became part of the retail sector. The authors also tried to find how sensory branding is used to increase consumption and leave a lasting impression in the minds of the customers. In a diversified marketing where a large variety of products are available, sensory marketing helps in distinguishing a product from competitors.

Objective of the study

To investigate the retail executive's viewpoint regarding the impact of multisensory marketing on consumers.

3. Methodology

Sample and Procedure

A sample of 100 was taken in order to apply EFA which requires 5 times the sample according to number of statements which in this case was 20 (Gorsuch, 1983; Kline, 1998). The data was collected using a survey questionnaire using judgemental sampling.

Measures

With reference to previous researchers', it was found that no study had been done in context of employees of retail sector in the area of sensory marketing. Therefore, the questionnaire was developed by the researchers using expert opinion and pilot testing. The researcher approached the Mall Manager to take necessary permission for conducting the survey in their premises. The data was collected from May 2019-January 2020.

Results

Three demographic characteristics were recorded for the required study which included age, gender and designation of the employees.

Table 1 Demographic Characteristics

Sample characteristics		Frequency	Percentage
Gender	Male	71	71
	Female	29	29
Designation	Manager	34	34
	Sales Executive	63	63
	Owner	03	03
Average Age		27.81 years	

Source: Data collected by researcher

As can be seen from the table 1, majority of the respondents were male (71 per cent). Most of the respondents were sales executives (63 per cent), 34 were managers and 3 were owners. The average age of the respondents was 27.8 years.

Exploratory Factor Analysis

To identify the factors involved in impacting multisensory marketing on consumers based on the viewpoint of retailers, Exploratory Factor Analysis was applied and further Confirmatory Factor Analysis was employed to confirm the factors. For this a self-reporting questionnaire was used comprising of 20 items using 5-point Likert scale (1= Strongly disagree to 5= Strongly agree). The items were developed by the researcher using expert opinion as shown in table 2.

Table 2 Measurement Scale for Employee Survey

S. No.	Coding	Statements
1.	M1	Background **music** creates a pleasing atmosphere for the customers.
2.	M2	Playing loud **music** attracts more customers.
3.	M4	Slow **music** influences customers to stay longer.
4.	M5	Playing **music** leads customers to spend more money.
5.	V6	Bright **colours** are helpful in attracting customers.
6.	V7	Proper **lighting** creates a comfortable atmosphere.
7.	V8	Customers observe the **décor** of the retail outlet.
8.	V9	**Interior design** of the store is visually appealing to the customers.
9.	V10	Use of **banners** helps customers to select products for purchase.
10.	S11	Use of **scent** in the store environment gives a pleasant experience.
11.	S13	Presence of **smell** increases the number of items the customer purchases.
12.	S14	Customers tend to stay longer in the presence of **smells**.
13.	S15	Presence of **smell** leads to positive mood in customers.
14.	T16	Store **temperature** influences the footfall (number of people visiting) inside the store.
15.	T17	Allowing customers to **touch** products before purchase help to increase sales.
16.	T18	Comfortable **seating** arrangement makes customer stay longer.
17.	T19	Customers feel more satisfied when allowed to **touch** products.
18.	T20	A warm handshake or friendly **touch** is reassuring for the customer.
19.	T21	When moving inside stores it is important for customers to **touch** all kinds of products.
20.	T22	**Touching** products can be fun for customers.

Source: Expert opinion

4. KMO and Bartlett

Table 3 KMO and Bartlett's Test for Sensory Items (Employee Survey)

Measure of Sampling Adequacy using Kaiser-Meyer-Olkin.		.697
Test of Sphericity by Bartlett	Approx. Chi-Square	1723.293
	Degrees of freedom	190
	Significance	.000

Source: Data collected by researcher

Before applying Principal Component Analysis, using exploratory factor analysis, it was verified whether the data was suitable for exploratory factor analysis. For this, two values were calculated which included comparison of correlation matrix generated with the identity matrix using Bartlett's test of sphericity. Secondly, measure of sampling adequacy using KMO (Kaiser-Meyer-Olkin) test. The KMO value .697 which is greater than .6 and Bartlett's chi square significant at 5 per cent is recommended (McCrosky & Young, 1979; Pett et al., 2003; Tabachnick & Fidell, 2007). Thus, the data met the assumptions required for application of exploratory factor analysis as shown in table 3.

Principal Components Analysis was used to extract factors using factor analysis. Varimax rotation was used to attain simple structure having variables with factor loadings above .5. The output showed that two of the statements had loading less than .5 and were removed from further analysis (table 4). Hence, 18 statements were used for the extraction of factors.

Table 4 Rotated Component Matrix[a]

Statements	Component			
	1	2	3	4
T20	.823			
T17	.756			
T21	.752			
T19	.728			
T16	.690			
T18				
S15		.882		
S13		.864		
S11		.776		
S14		.770		
T22				
V7			.855	
V9			.847	
V8			.743	
V6			.697	
V10			.640	
M4				.829
M2				.829
M5				.803
M1				.778

The method of extraction used was Principal Component Analysis.

Varimax with Kaiser Normalizations was applied as method of rotation.

a. 5 iterations were used to converge rotation.

Source: Data collected by researcher

Again, Exploratory factor analysis was applied on the remaining 18 items to extract the final factors.

Using exploratory factor analysis four variables were derived which explained the retail executive's viewpoint regarding the impact of multisensory marketing on consumers. These four factors explained 67.54 per cent of the total variance and were named as sight cues, touch cues, smell cues and sound cues (table 5).

Table 5 Rotated Component Matrix[a] for Sensory Items

Code	Items	Factor			
		1	**2**	**3**	**4**
	Sight Factor				
V9	Interior design of the store is visually appealing to the customers.	.853			
V7	Proper lighting creates a comfortable atmosphere.	.847			
V8	Customers observe the décor of the retail outlet.	.754			
V6	Bright colours are helpful in attracting customers.	.700			
V10	Use of banners helps customers to select products for purchase.	.638			
	Touch factor				
T20	A warm handshake or friendly touch is reassuring for the customer.		.832		
T17	Allowing customers to touch products before purchase help to increase sales.		.792		
T21	When moving inside stores it is important fo r customers to touch all kinds of products.		.734		
T19	Customers feel more satisfied when allowed to touch products.		.726		
T16	Store temperature influences the footfall (number of people visiting) inside the store.		.698		
	Smell Factor				
S15	Presence of smell leads to positive mood in customers.			.876	
S13	Presence of smell increases the number of items the customer purchases.			.861	
S11	Use of scent in the store environment gives a pleasant experience.			.792	
S14	Customers tend to stay longe r in the presence of smells.			.791	
	Sound Factor				
M2	Playing loud music attracts more customers.				.834
M4	Slow music influences customers to stay longer.				.833
M5	Playing music leads customers to spend more money.				.807
M1	Background music c reates a pleasing atmosphere for the customers.				.784
	Eigen value	5.014	2.961	2.218	1.966
	TVE= 67.54%	17.460	17.365	17.118	15.605

The method of extraction used was Principal Component Analysis.
Varimax with Kaiser Normalizations was applied as method of rotation.
a. 5 iterations were used to converge rotation.

Source: Data collected by researcher

5. Description of Factors

1. Sight Factor:

The first factor explained 17.46 per cent of the total variance. It included five statements "Bright colours are helpful in attracting customers", "Proper lighting creates a comfortable atmosphere", "Customers observe the décor of the retail outlet", "Interior design of the store is visually appealing to the customers" and "Use of banners helps customers to select products for purchase."

2. Touch Factor:

The second factor explained 17.36 per cent of the total variance explained. It also included five statements "Store temperature

influences the footfall (number of people visiting) inside the store", "Allowing customers to touch products before purchase help to increase sales", "Customers feel more satisfied when allowed to touch products", "A warm handshake or friendly touch is reassuring for the customer" and "When moving inside stores it is important for customers to touch all kinds of products".

3. Smell Factor:

The third factor explained 17.11 per cent of the total explained variance. It included four statements "Use of scent in the store environment gives a pleasant experience", "Presence of smell increases the number of items the customer purchases",

"Customers tend to stay longer in the presence of smells" and "Presence of smell leads to positive mood in customers".

4. Sound Factor:

The last factor explained 15.60 per cent of the total variance. It included four statements "Background music creates a pleasing atmosphere for the customers", "Playing loud music attracts more customers", "Slow music influences customers to stay longer" and "Playing music leads customers to spend more money".

5. Reliability

Cronbach alpha was used to assess the reliability of the factors as shown in table 6.

Table 6 Reliability using Cronbach Alpha

Scale attribute	Alpha value	No. of items
Sound	.844	4
Sight	.836	5
Smell	.877	4
Touch	.834	5
Overall	**.826**	**18**

Source: Data collected by researcher

It was found that the reliability of all the factors (four factors) was above 0.7 (minimum required value) which shows the reliability of the scale. The values of reliability ranged from .82 to .87 which was well above the required value. The overall value of Cronbach alpha for the 18 statements was .826 suggesting good reliability of scale (Nunnally, 1978).

6. Confirmatory Factor Analysis

To confirm the four factors obtained using exploratory factor analysis, CFA (Confirmatory Factor Analysis) was applied.

To assess the goodness of fit Chi-square analysis, Root Mean Square of Approximation Error (REMSA), Comparative Fit Index (CFI), Goodness-of-Fit Index (GFI), and Tucker-Lewis index (TLI) were computed.

The estimated measurement model is presented in the Figure 1 which shows the structural relationships between indicators (observed variables) and constructs (unobserved variables) along with standardized factor loadings and error variance for measurement items.

7. Model Fit Indices

Table 7 Model Fit Indices

Parameter	Observed value	Recommended value (Hu and Bentler, 1999; Byrne, 2001)
CMIN/DF	1.34	1-5
GFI	.86 ~.9	>.8 (acceptable), >.9 (good)
CFI	.97	>.8 (acceptable), >.9 (good)
NFI	.90	>.8 (acceptable), >.9 (good)
RMSEA	.06	.06-.08
RMR	.05	.05-.08
Chi square (Df)	171.09 (127)	
Probability level	.006	

Source: Data collected by researcher

6. Validity Test

Content Validity

Pilot testing was done to check whether the wording and language of the questionnaire was appropriate for the target audience.

Nomological Validity

Since all the estimates of correlation between the four constructs were significant and positive. Hence nomological validity was established.

Convergent Validity and Discriminant Validity

Table 8 Validity of Extracted Factors

	CR	AVE	MSV	ASV	Sight	Sound	Smell	Touch
Sight	0.844	0.526	0.111	0.095	0.725			
Sound	0.806	0.549	0.068	0.040	0.260	0.741		
Smell	0.848	0.608	0.111	0.078	0.333	0.172	0.780	
Touch	0.836	0.509	0.108	0.075	0.328	0.146	0.308	0.714

Source: Data collected by researcher

As seen in above table 8 the value of Composite Reliability (CR) was above .7 and Average Variance Extracted (AVE) was greater than .5 (minimum criteria as suggested by Fornell & Larcker, 1981) which shows the convergent validity of all the factors.

Further, the values of Maximum Shared Variance (MSV) were less than AVE and Average Shared Variance (ASV) was also less than AVE which showed that discriminant validity existed for all the factors derived.
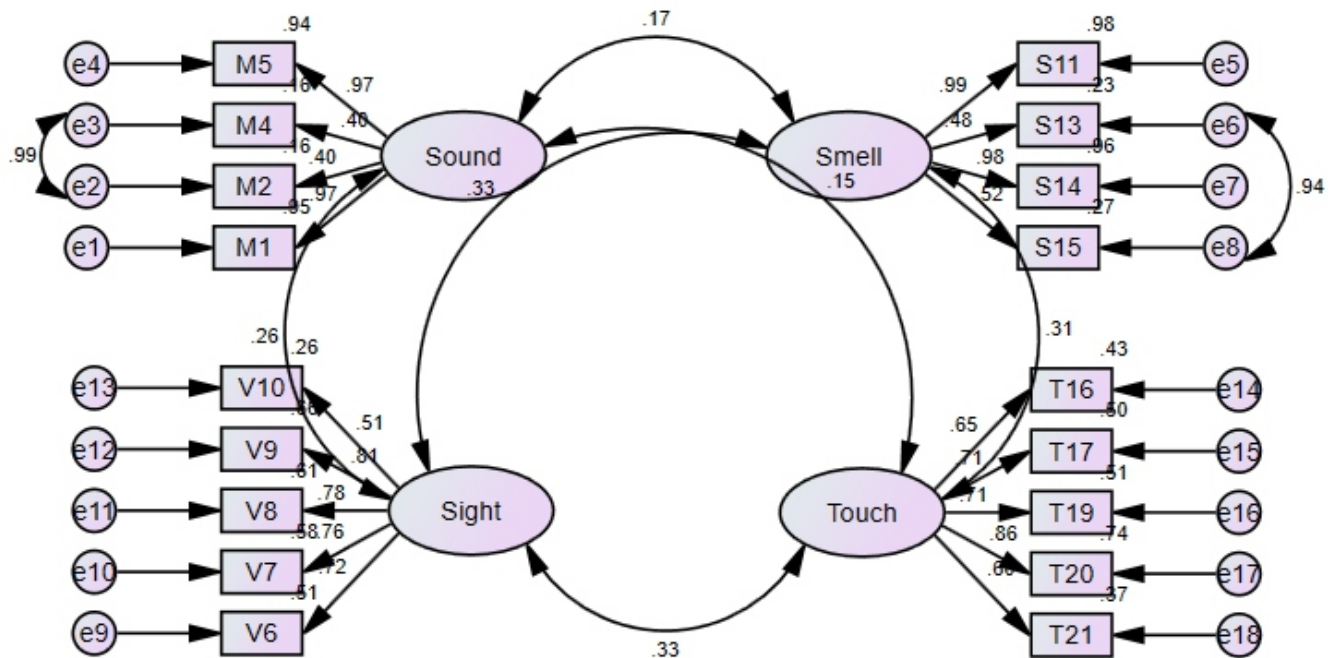
Figure 1 Confirmatory Factor Analysis

Table 9 Regression Weights: (Group number 1 - Default model)

			Estimate	Standard Error	Critical Ratio	P
M1	<---	Sound	1.000			
M2	<---	Sound	.504	.121	4.153	***
M4	<---	Sound	.504	.121	4.155	***
M5	<---	Sound	1.009	.078	12.987	***
S11	<---	Smell	1.000			
S13	<---	Smell	.403	.076	5.300	***
S14	<---	Smell	.999	.042	23.659	***
S15	<---	Smell	.421	.071	5.895	***
V6	<---	Sight	1.000			
V7	<---	Sight	.992	.143	6.929	***
V8	<---	Sight	1.122	.159	7.049	***
V9	<---	Sight	1.080	.148	7.302	***
V10	<---	Sight	.711	.150	4.729	***
T16	<---	Touch	1.000			
T17	<---	Touch	1.304	.220	5.916	***
T19	<---	Touch	1.174	.198	5.934	***
T20	<---	Touch	1.661	.248	6.686	***
T21	<---	Touch	1.068	.206	5.182	***

Source: Data collected by researcher

All the items significantly (p<.01) loaded on to the variables as seem through regression results in table 9.

MEAN VALUES TO SHOW THE SIGNIFICANCE OF EACH FACTOR

Table 10 Descriptive Statistics

Factors	Mean	Std. Deviation
Sound	3.54	.866
Sight	4.37	.454
Smell	3.83	.714
Touch	4.04	.573

Source: Data collected by researcher

On comparing the mean values of all the four factors (table 10) it was found that the value was highest for sight (4.37±.454). The second was touch with a value of 4.04±.573, third was smell (3.83±.714) and lastly sound with a value of 3.54±.866. Although previous studies on atmospherics and sensory marketing have not taken opinion of retailer employees (executives/salespersons) but considering the views of customers, the outcomes of this research were in consistency with studies conducted previously (Bellizzi and Hite, 1992; Lindstrom, 2005; Singh, 2006; Krishna, 2012). Thus, it can be said that as per retailer's viewpoint sight and touch were the most important factors influencing consumer behaviour by using multisensory marketing. This is mainly because when visiting brick and mortar stores the first and foremost sense that works is sight which helped to perceive products. Further, the sense of touch is the second sense to be used as consumers use touch to examine products. Hence, maximum focus should be on these two sensory cues and efforts must be made to make better use of other sensory cues.

7. Discussion

In case of the scale used for employees, the EFA revealed for four factors named sight, sound, smell and touch cues comprising of 18 statements. These statements explained 67.64 per cent of the total variance explained. The value of Cronbach's alpha was .826 showing good reliability. The validity was also checked and the scale was found reliable. In these employees survey also the impact of multisensory environmental cues was evident with sight and touch cues having the largest impact. This dimension was not covered in previous studies which mainly focused on consumer surveys at retail outlets or restaurants.

8. Conclusion

The use multisensory cues have been studied mostly from the perspective of customers. Whether it is hotels, spas, restaurants, retail outlets; the employees' perspective on what they consider important has been left out. The present study filled these existing gaps in literature by providing the viewpoint of retailers regarding use of multisensory marketing. The study helped to create a scale for assessing the impact of multisensory cues in retail from retailer's perspective. Further, the study results showed that among the four senses (sight, sound, smell and touch) that were studied, sight and touch were the most prominent.

9. Future Research

The survey of employees in organized retailing had not been done in previous studies but the sample size used in this study was small. Hence, future research may include a larger sample. The fifth sense of taste was not explored in this research. Further, research can introduce items related to this variable to test its significance.

10. Practical Implications

The study has important implications for marketers and retailers. The results of the study suggested that retailers think that use of multiple senses helps in the effective engagement of customers. The results also showed that the retailers were of the view that sense of sight and touch were most prominent among the four senses studied. Thus, when using the sensory cues, the use of sight cues and touch cues must be product appropriate so that likelihood of purchase can be increased.

11. References

- Bellizzi, J. A., & Hite, R. E. (1992). "Environmental color, consumer feelings, and purchase likelihood". Psychology & marketing, 9(5), pp. 347-363.

- Byrne, B. M. (2001). Structural Equation Modeling with Amos: Basic Concepts, Applications, and Programming. 1st ed: Taylor and Francis, Inc.

- Cachero-Martínez, S., & Vázquez-Casielles, R. (2017). "Living positive experiences in store: how it influences shopping experience value and satisfaction?". Journal of Business Economics and Management, 18(3), pp. 537-553.

- Clarke, D. W., Perry, P., & Denson, H. (2012). "The sensory retail environment of small fashion boutiques". Journal of Fashion Marketing and Management: An International Journal, 16(4), pp. 492–510.

- Dalwadi, R., Rathod, H. S., & Patel, A. (2010). "Key Retail Store Attributes Determining Consumers' Perceptions: An Empirical Study of Consumers of Retail Stores Located in Ahmedabad (Gujarat)". SIES Journal of Management, 7(1).

- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics.

- Ghosh, P., Tripathi, V. and Kumar, A. (2010). "Customer expectations of store attributes: A study of organized retail outlets in India", Journal of Retail and Leisure Property, 9(1), pp. 75–87.

- González-Benito, Ó., Martos-Partal, M., & San Martín, S. (2015). "Brands as substitutes for the need for touch in online shopping". Journal of Retailing and Consumer Services, 27, pp. 121-125.

- Gorsuch, R. L. (1990). "Common factor analysis versus component analysis: Some well and little known facts". Multivariate Behavioral Research, 25(1), pp. 33-39.

- Grewal, D., Levy, M. and Kumar, V. (2009). "Customer experience management in retailing: An organizing framework", Journal of Retailing, 85(1), pp. 1–14.

- Helmefalk, M., & Berndt, A. (2018). "Shedding light on the use of single and multisensory cues and their effect on consumer behaviours". International Journal of Retail & Distribution Management.

- Helmefalk, M., & Hultén, B. (2017). "Multi-sensory congruent cues in designing retail store atmosphere: Effects on shoppers' emotions and purchase behavior". Journal of Retailing and Consumer Services, 38, pp. 1-11.

- Hu, L., & Bentler, P. M. (1999). "Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives". Structural Equation Modeling, 6, pp. 1-55.

- Hultén, B., Broweus, N., & Van Dijk, M. (2009). What is Sensory Marketing?. In Sensory marketing (pp. 1-23). Palgrave Macmillan, London.

- Kline, R. B. (1998). "Measurement models and confirmatory factor analysis". Principles and practice of structural equation modeling, 22005, pp. 133-145.

- Krishna, A. (2012). "An integrative review of sensory marketing: Engaging the senses to affect perception, judgment and behavior". Journal of Consumer Psychology, 22(3), pp. 332-351.

- Leenders, M. A., Smidts, A., & El Haji, A. (2016). "Ambient scent as a mood inducer in supermarkets: The role of scent intensity and time-pressure of shoppers". Journal of Retailing and Consumer Services.

- Lindstrom, M. (2005). "Broad sensory branding". Journal of Product & Brand Management, 14(2), pp. 84 – 87.

- Martin, S. W. (2013). How Sensory Information Influences Price Decisions. Harvard Business Review, (July).

- McCrosky, J. C., & Young, T. J. (1979). "The use and abuse of factor analysis in communication research". Human Communication Research, 5, pp. 375–82.

- Milliman, R. E. (1982). "Using Background Music to Affect the Behavior of Supermarket Shoppers". The Journal of Marketing, 46(3), pp. 86-91.

- Milliman, R. E. (1986). "The influence of background music on the behavior of restaurant patrons". Journal of Consumer Research, 13(2), pp. 286-289.

- Minh, D. T., & Ly, P. T. T. (2015). "An Emerging Marketing Technology: Sensory marketing applied in Retail industry".

- Mittal, A. and Mittal, R. (2008). "Store choice in the emerging Indian apparel retail market: An empirical analysis", IBSU Scientific Journal, 2(2), pp. 21–46.

- Moreira, A. C., Fortes, N., & Santiago, R. (2017). "Influence of sensory stimuli on brand experience, brand equity and purchase intention". Journal of Business Economics and Management, 18(1), pp. 68-83.

- Nunnally, J. C. (1978). Psychometric Theory. New York, NY: McGraw-Hill Inc.

- Overmars, S., & Poels, K. (2015). "A touching experience: Designing for touch sensations in online retail environments". International Journal of Design, 9(3).

- Pett, M. A., Lackey, N. R., & Sullivan, J. L. (2003). Making sense of factor analysis. The use of factor analysis for instrument development in health care research. Thousand Oaks, CA: Sage Publications, Inc.

- Riedel, A., & Mulcahy, R. F. (2019). "Does more sense make sense? An empirical test of high and low interactive retail technology". Journal of Services Marketing.

- Sachdeva, I., & Goel, S. (2015). "Retail store environment and customer experience: a paradigm". Journal of Fashion Marketing and Management, 19(3), pp. 290-298.

- Singh, S. (2006). "Impact of color on marketing". Management Decision, 44 (6), pp. 783-789.

- Tabachnick, B. G., & Fidell, L. S. (2007). Using multivariate statistics (5th ed.). Boston, MA: Allyn and Bacon.

Research On Idiosyncratic Deals: Bibliometric Analysis And Future Research Avenues

Bhawna *
Prof. Sanjeev Kumar Sharma **
Prof. Prashant Kumar Gautam***

Abstract

Purpose – This paper's goal is to investigate current research trends on idiosyncratic deals using bibliometric analysis of Scopus indexed publications. The goal of this study is to pinpoint the key areas that could be the focus of future research projects. The bibliographic information of 194 publications on the idiosyncratic deals' domain published in the Scopus indexed journals for the period 2001 to 2022 was analysed through bibliometric approach. The VoSviewer user interface is then used to analyse the retrieved data. Finally, utilising descriptive and visual representations, discussions on the contributions of citations, authors, keywords and sources to the development of the field have been provided. Idiosyncratic deals have been more popular as a research area recently. There is, however, a dearth of literature on the subject. The authors have found that earlier study in the subject has mainly concentrated on the chosen advantages of the domain, leaving a wide range of possibilities for further investigation. The findings in this regard identified a few unknown areas that are unique to tailored job settings and the urgent need for stakeholders' and scholars' attention.

Future research directions- To broaden the field's focus, it has been suggested that research be done from marketing, behavioural, regulatory, social, and quality angles.

Originality- The researchers' best knowledge indicates that this will be the first bibliometric analysis of idiosyncratic deals research. In recognising existing trends in i-deals research and suggesting a plan of research strategies for the future.

Keywords- Idiosyncratic deals, personalized work arrangements, personalized employment arrangement, bibliometric analysis, VoSviewer

1. Introduction

IDIOSYNCRATIC DEALS

Idiosyncratic deals are "voluntary and tailored agreements of a non-standard form established with individual employees and their employers on terms that fit each party"(Rousseau et al., 2006). The four distinct features of idiosyncratic deals include (a) they are the result of a mutually beneficial negotiation between an employer and employee; (b) they exhibit natural heterogeneity; (c) they provide mutual benefits to the employee and the employer; and (d) their scope can vary from a single, one-off arrangement to a completely individualized one.

Employees are no longer passive recipients of job designs, but instead they take more initiative in shaping their jobs. The active role that individuals play in determining their own working and employment situations has received much attention from both academic studies and management reports (Hornung et al., 2014). The Covid 19 epidemic has altered our working habits in addition to changing job patterns. Gone are the days when managers use to design jobs for individual employees who then performed their jobs according to the specified job design. As a result of their own initiative or agreements with their employer, employees in today's workplaces have different work arrangements from their co-workers, undermining long-held notions of standardisation in human resource management. Employers are under more pressure than ever to compete for talent and keep it. Granting of idiosyncratic deals are assumed to replicate positive employee behaviours such as higher job satisfaction, enhanced work engagement, increased

* Research Scholar, University Institute of Applied Management Sciences (UIAMS), Panjab University, Chandigarh
  bhawnaswami19999@gmail.com
** Director, University Institute of Applied Management Sciences, Panjab University, Chandigarh.
  sksharmapu@gmail.com
*** Professor, UIHTM, Panjab University, Chandigarh
  prashant.k.gautam@gmail.com

organizational commitment, enhanced meaning to work, organizational citizenship behaviour as per the norm of reciprocity and the social exchange theory. When an employer offers an employee an ideal, that worker feels obligated to show appreciation by displaying positive, productive behaviours at work. The idea of reciprocity holds that when employers give incentives to employees, such as unique work-related arrangements, they can expect them to do so by pushing them to perform harder and more effectively. If you are an employer, i-deals might be a great way to show gratitude for a job well done (Liao et al., 2016). Additionally, this idea explains why people have different perspectives on the appropriateness of favours in exchange for other types of labour. As a result, it is an important consideration to study the i-deals at work. The personalization of HR policies has attracted increasingly scholars' attention over the last one decade. The quantitative/ scientific publications addressing positive and negative consequences of offering of idiosyncratic deals, their impact has grown. This literature deepens understanding mainly about i-deals research foundation, developments in the personalized form of work arrangements i.e., idiosyncratic deals, trends in idiosyncratic deals, and the future research direction. Despite the rising attention of scholars and practitioners towards the emerging field of idiosyncratic deals, no bibliometric review has been conducted in this field of research. The current study uses a bibliometric approach to review the existing literature with the goal of advancing the study of idiosyncratic deals. By looking at the body of publications on a subject, bibliometric indicators are becoming increasingly popular as efficient methods for assessing the research performance of a theme or subject. These studies include analyses of top scholars, nations, and institutions with a focus on general overviews of the relevant research fields (Bjork et al., 2014). Despite the fact that these methods are typically thought of as being quantitative, they can also be utilised to produce important qualitative results. It is notable because, in contrast to peer review, bibliometric methodologies can be used to quickly assess a huge number of publications.

This study fills numerous gaps in the literature. In light of the foregoing, this chapter seeks to fill in all the gaps in the realm of idiosyncratic transactions study. In this developing topic of idiosyncratic deals, research provides a thorough overview of previous work as well as recent work. It also stretches current literary works by showing the future dimensions of idiosyncratic deals, i.e., customised work arrangements to get around current obstacles. As a result, it gives practitioners and academics useful insights for upcoming academic study.

RESEARCH QUESTIONS

The following research questions are the main focus of the current study:

RQ1. How has Idiosyncratic deals research has evolved since its foundation?

RQ2. According to the number of citations, which articles have the greatest impact on the study of idiosyncratic deals?

RQ3. Who are the most significant and prominent core authors, publications, and countries contributing to the field on idiosyncratic deals research?

RQ4. What is the future research direction of idiosyncratic deals research and gaps?

The authors did a bibliometric analysis of information on idiosyncratic deals research in the social sciences that was taken from the Scopus database in order to accomplish the study's desired purpose. By analysing a sizable portion of pertinent scholarly work, these bibliometric methodologies have been thoroughly investigated to help regulate the research literature with a multidimensional perspective (caviggioli & Ughetto, 2019). Furthermore, by carefully assessing any potential biases that can influence the literature review, these bibliometric techniques kept their focus on the statistical framework (Xu et al., 2018).

2. Research Methodology

2.1 BIBLIOMETRIC ANALYSIS

A method of presenting scientific publications that aims to evaluate the state of a certain subject as well as the calibre and influence of writers and sources is bibliometric analysis (Van Raan, 2014). According to their social, conceptual, and intellectual frameworks, disciplines can be examined historically using bibliometrics (Zupic & Ater, 2015). It analyses and categorises bibliographic data using sample summaries of the literature that has already been published (Donthu et al., 2020, 2021). Bibliometric analysis may be used by new researchers to guide their future work (Mavric et al., 2021). Researchers utilise this technique to identify changing journal trends, research aspects, intellectual structure and to delve deeper into the patterns of collaboration in a given topic in the literature already available(Donthu et al., 2020, 2021; Sigala, 2021). Bibliometric analysis is helpful in management studies for gathering data, assessing the research progress, and offering an evidence-based insights by analysing earlier study publications due to the continual rise in idiosyncratic deals literature (Michael Hall, 2011).

Researchers have recognised two categories of bibliometric techniques: performance analysis & scientific mapping (Cobo et al., 2011). The performance analysis is concerned with the outcomes of study in any field of science, whereas the scientific mapping analysis talk about on different components of a research activity interact with one another (Ramos-Rodríguez & Ruíz-Navarro, 2004). Both types of methodologies are used in

this study to give a comprehensive analysis of the unique deals. Our performance analysis takes into account the total number of publications, annual structure, total citations, most-cited papers, productive authors, countries, and institutions/universities (descriptive). By comparing articles and citations, we demonstrate productivity and influence (Lu and Nepal, 2009).

We examine Citation Analysis of authors, documents, Co-occurrence of Author Keywords, Co-authorship analysis, Co-Citation of Source, documents and authors using Science Mapping (Network Analysis) in VOS viewer (Bastidas-Manzano et al., 2021; Donthu et al., 2020, 2021; Evren & Kozak, 2014; Garrigos-Simon et al., 2019; Lima Santos et al., 2020; Sharma & Singh, 2018; Suban et al., 2021) using Network visualisation software called VOS viewer.

3. Data Sources, Extraction, And Cleaning

The data have been retrieved from Scopus which is considered an extensive database for social science (Cobo et al., 2011; Pérez-Gutiérrez et al., 2021). It is useful for researchers as it provides easy features to use in order to compile data. The keywords used to extract data from the Scopus database included "idiosyncratic deals" OR "personalized work arrangements" OR "personalized employment arrangements". These keywords have been used as a search item in the title box of articles to find more accurate articles that would satisfy the study objectives. Total 194 documents were published during year 2001 to August 2022. The most pertinent papers were then chosen for a final evaluation using three procedures. We only took the 194 that were related to the English language. Next, papers that were not written in English were excluded. Five documents published in Spanish, one in Chinese, one in Dutch and one in French out of 194 publications found in Scopus were excluded from analysis. After limiting the search string to "English" language only, in totality 63 documents we excluded after keywords reading, abstract reading and reading full text as doubtful or irrelevant documents. Finally, 131 publications were collected for our assessment of the literature and bibliographic analysis.

Further, final documents included 112 journal articles, 7 book chapters, 2 book series, 6 review and 4 conference papers.

PUBLICATION TREND YEARLY BASIS

To determine the fundamental continuous pattern of publication on this topic, a descriptive analysis of 131 papers was conducted. We have examined the publication trend, which

may be viewed in terms of total publications by year, country, journal, and institution, in order to respond to our first research question (RQ1). From the available data from Scopus, figure 1 results interprets that the idiosyncratic deals concept evolved from year 2001, moreover years 2002,2003,2005,2006 and 2007 made no contribution to idiosyncratic deals research. Year 2021, resulted in the highest publishing i.e., 21 publications in idiosyncratic deals research followed by year 2022 (15 publications till august) and year 2018, 2016 both having 14 publications. Furthermore, it is evident that customised work arrangements are a reality that will continue to develop and spread as more and more solutions come into existence.
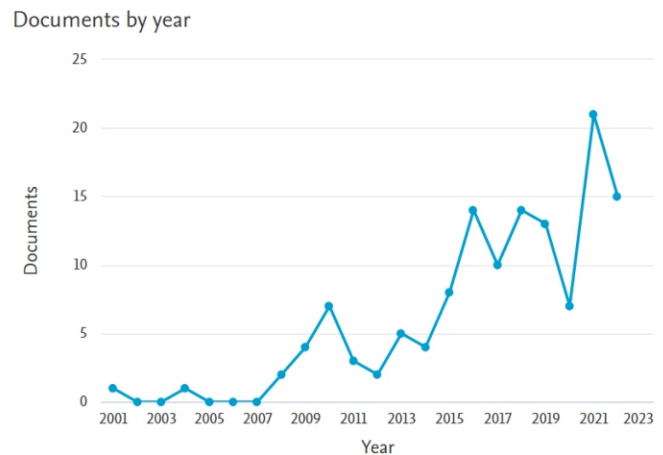

Figure 1: Annual Distribution of Idiosyncratic Deals Literature Information.

MOST PRODUCTIVE JOURNALS I.E., SOURCE WISE PUBLICATIONS:

Table 1, figure 2 shows the source-wise publications on idiosyncratic deals during the period under study. A total of 72 sources/journals were part of 131 articles. Journal titled Group and Organization Management, Journal of Organizational Behavior, Journal of Vocational Behavior and International Journal of Human Resource Management each has published a maximum (6 documents). But Journal of Organizational Behavior overall ranks highest both in terms of documents published (6) as well as journal citation with 520 total citations. Talking about journal with second highest citation (not documents published) is Journal of Applied Psychology with 477 citations having 5 documents published. Journal of Vocational Behavior ranked third in terms of number of citations with 224 citations having 6 documents published in the research understudy.

Table 1

Name of the journal	Documents published	Citations
Journal Of Organizational Behavior	6	520
Journal Of Vocational Behavior	6	224
International Journal of Human Resource Management	6	57
Group And Organization Management	6	0
Journal Of Applied Psychology	5	477
Human Relations	5	98
Journal Of Managerial Psychology	4	153
Human Resource Management	4	83
Frontiers In Psychology	4	8
Journal of Management	3	223
Journal of Management studies	3	157
Journal of business ethics	3	73
Career Development International	3	42
Organizational dynamics	2	206
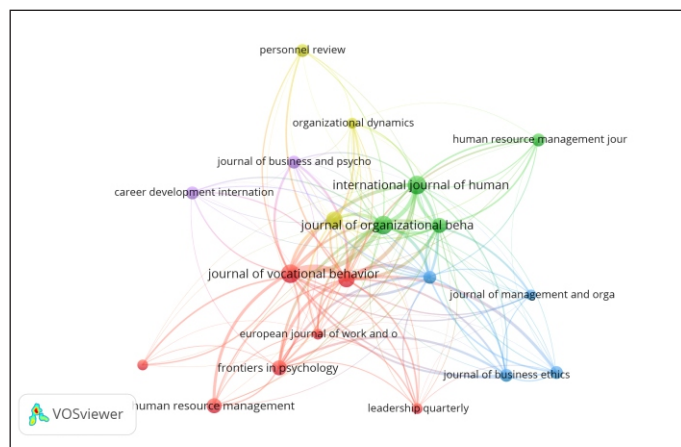
Figure 2: Most productive journals contributing to research on idiosyncratic deals.

4. Bibliometric Analysis

Although frequently used in information and library science, etc., this approach is still relevant in social scientific research today. By using bibliography data from published databases, it creates operational metaphors of logical arenas (Zupic and Ater 2015). Co-authorships, co-occurrence of keywords, document-wise citation analysis, bibliographic couplings, and co-citations of documents, authors are all examples of bibliometric analysis that have been examined.

Leading Authors, Institutions, Countries And Journals

The 10 most prolific authors with the most articles published are listed in Figure No. 3 in order of popularity. The authors most frequently published on topic idiosyncratic deals included Rousseau, D.M. having 15 publications, Hornung, S. with 9 publications, Glaser, J. with 7 publications, Anand, Bal, P.M.,

Guerrero, S. and Rofcanin, Y. the four authors each one has 6 articles on topic understudy. For total 131 research papers, a total of 162 authors contributed.
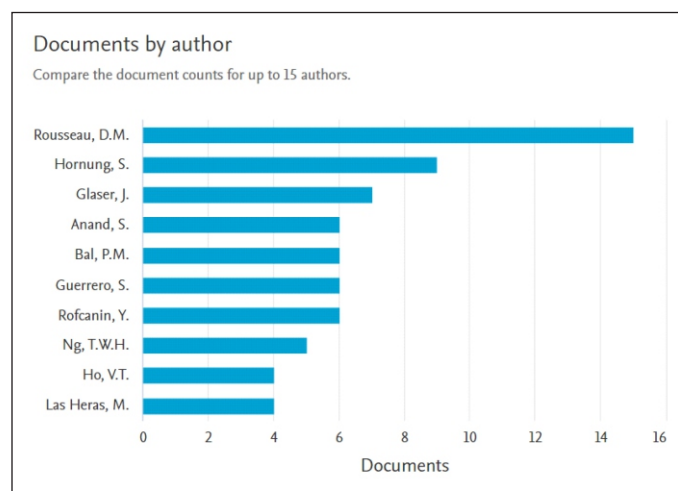

Figure 3: Leading authors contributing to research on idiosyncratic deals

AFFILIATION ANALYSIS I.E., MOST FREQUENT INSTITUTIONS IN IDIOSYNCRATIC DEALS

The top ten institutions that generated the most idiosyncratic deal-related research outputs over the course of the study are covered in this section. Together, the top 10 institutions produced 75 papers. A total of 159 intuitions across the globe have contributed in the publications analysed. Author affiliations represents top 10 institutions contributing to idiosyncratic deals literature in figure 4, categorized from most to least frequent. Results indicate that with a total of 13 publications, Carnegie Mellon University was the most

productive and significant university in this research area, followed by Tepper School of Business with 11 papers and Hong Kong Polytechnic University with 10 papers. Talking in context of Indian institutions only 4 articles contributed to idiosyncratic deals research during the time period understudy i.e., Kurukshetra University (2 publications), Indian Institute of Management Bangalore (1 publication), University of Hyderabad (1 publication).
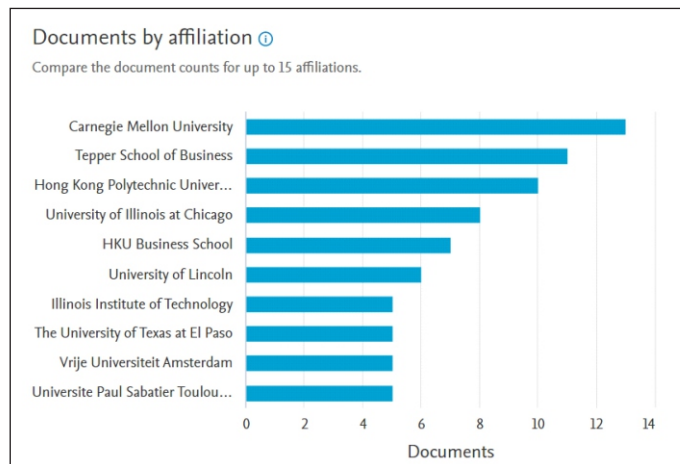

Figure 4: Leading institutions in research on idiosyncratic deals

5. Affiliation Analysis I.e., Most Frequent Countries Contributing To Idiosyncratic Deals Research

GEOGRAPHIC DISTRIBUTION OF IDIOSYNCRATIC DEALS RESEARCH PUBLICATIONS

The idiosyncratic deals or i-deals scientific research is globalized, with contributions from 37 countries in publications analysed. Table 2 and figure 5-6, lists the top 10 countries where authors produce the most research on idiosyncratic deals. The United States led the productivity ranking of countries with publications of 45 scholarly documents on research topic understudy, followed by UK with 28 publications on idiosyncratic deals research papers published with Scopus. India has the status of 15th significant contributor out of 35 among the publications published in this area of research, having 4 publications. This section uses VOSviewer to illustrate the geographic locations for research collaborations to create a deeper understanding of the theoretical growth of 131 papers in the area of idiosyncratic trades. References from 37 different nations were found among the 131 articles that were identified. For simplicity of analysis, we selected the countries with a minimum of 5 citations and with publishing minimum number

of 2 documents; out of 37 countries 21 countries met the thresholds. Results depicted 6 clusters, 21 items, 171 links and total link strength to be 2930. Among the six nations that make up Cluster 1, there are the United States, Austria, China, Germany, Taiwan, and Hong Kong. With 48 documents, 1889 citations, and 1436 overall link strength, the United States emerged as the most productive and significant nation. In terms of highest documents published United Kingdom ranked second with 27 documents, 356 citations and 551 total link strength, China, with 23 documents, was third in the list of countries publishing documents, with 184 citations and 533 total links. Whereas, in terms on Citations Germany ranked second after UK with 848 citations, followed by Hong Kong with 795 citations irrespective of only 18 documents published. India contributed only 4 items to the study's idiosyncratic deals, according to research upon these contributions (one article in year 2016, 2019, 2020 and 2022.)

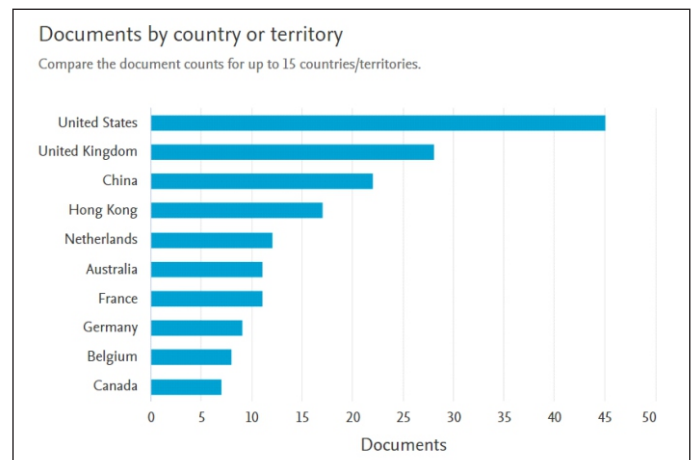| Country	Documents published	Citations
United states	48	1889
Germany	10	848
Hong Kong	18	795
United Kingdom	27	356
Netherlands	11	233
Switzerland	4	210
Singapore	3	188
China	23	184
Belgium	8	105
Australia	10	101
France	11	99
Spain	6	68
Canada	7	59

Figure 5: Most frequent countries contributing to research on idiosyncratic deals
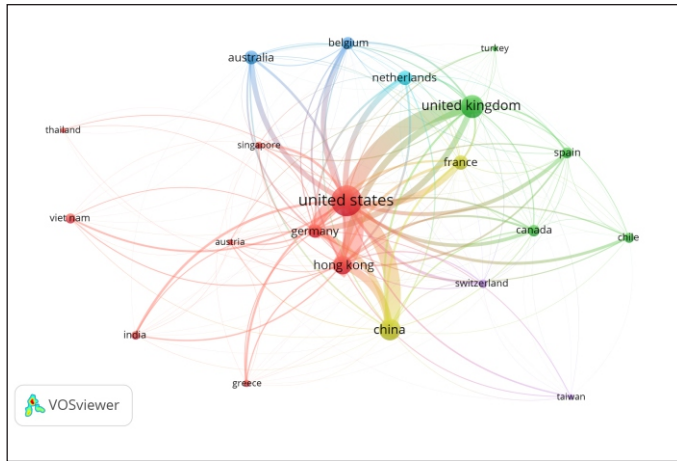
Figure 6: Most frequent countries contributing to Idiosyncratic deals research

works (Seglen, 1989). Table 3 and figure 7 shows document-wise citation analysis i.e., the most cited papers in the idiosyncratic deals literature which focus to create new approach for innovation and mapping in i-deals.

In this section, we offer the top 11 ranking papers that met the requirement of having at least 90 citations in the Scopus database, which led to 11 top-cited articles from our search of 131 articles. Results showed out of 131 articles, 21 articles are having 40 or more citations. In this database, each article has eight on average citations. However, 20 articles, or 15% of all papers, have never been cited. Additionally, out of 131 articles, 53 articles, or 40%, have been cited one to ten times. A further 46 articles, or 35%, have been quoted ten to ninety times. The citations ranged from 248 to 91. Most of these papers were published from 2008 to 2016, and their topics were related to relating workers and idiosyncratic deals.

Impact Analysis

Analysis of Citations Document Being Unit Of Analysis

One can gauge the relative importance or impact of an author by counting the number of times their work has been cited by other

Table 3: Document-wise citation analysis

| Sr. no.	Title	Author	Publication Year	Citation
1	Creating Flexible Work Arrangements Through Idiosyncratic Deals	Hornung, S et al.	2008	248
2	Good citizens in poor-quality relationships: Idiosyncratic deals as a substitute for relationship quality	Anand, S. et al.	2010	216
3	Beyond top-down and bottom-up work redesign: Customizing job content through idiosyncratic deals	Hornung, S et al.	2010	213
4	The idiosyncratic deal: Flexibility versus fairness?	Rousseau, D.M.	2001	183
5	Motivating Employees to Work Beyond Retirement : A Multi-Level Study of the Role of I-Deals and Unit Climate	Matthijs Bal, et al.	2012	155
6	Let's Make a Deal: Development and Validation of the Ex Post I - Deals Scale	Rosen et al.	2013	133
7	Idiosyncratic deals in contemporary organizations: A qualitative and meta-analytical review	Liao, C et al.	2016	106
8	Why supervisors make idiosyncratic deals: Antecedents and outcomes of i-deals from a managerial perspective	Hornung, S et al.	2009	97
9	Idiosyncratic Deals: Co-workers as Interested Third Parties	Lai, L. et al.	2009	95
10	Idiosyncratic deals and employee outcomes: The mediating roles of social exchange and self-enhancement and the moderating role of individualism	Liu, J. et al.	2013	93
11	Idiosyncratic deals: Testing propositions on timing, content, and the employment relationship	Rousseau, D.M.	2009	91
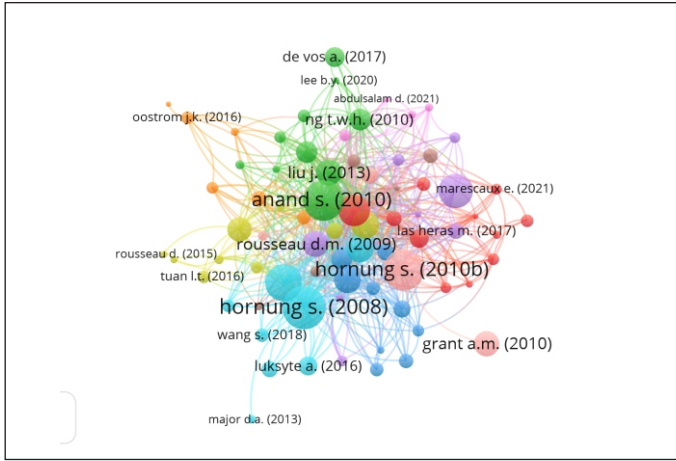
Figure 7: Document-wise citation analysis

Most Productive Authors: Author-wise Citation Analysis

Table 4 and figure 8 shows author-wise citation analysis i.e., the most cited authors in the idiosyncratic deals or i-deals literature which focus to create new approach for innovation and mapping in i-deals. In totality 267 authors contributed to 131 articles understudy. We set the inclusion criteria for analysing highest citing authors as only those having at-least 5 citations and 2 documents to be part of analysis. Out of 267 authors, 54 authors met the threshold. The figure below shows the citations for authors in the field of idiosyncratic deals research and found that Rousseau d.m, the most productive author in idiosyncratic deals research domain with 1477 citations (16 documents, TLS:953), followed by Hornung S. with 781 citations (9 documents, TLS:543).

Table 4 :

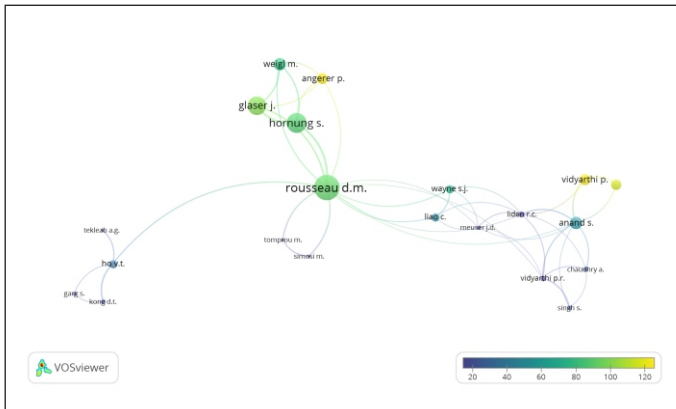| Author	Total Publications	Total Citation	Avg. Citation (TP/TC)	Total Link Strength
rousseau d.m.	16	1477	92	953
hornung s.	9	781	87	522
glaser j.	7	674	96	420
weigl m.	4	312	78	192
anand s.	6	300	50	328
angerer p.	2	253	126	127
vidyarthi p.	2	240	120	161
ng t.w.h.	5	213	43	297
matthijs bal p.	3	191	67	108
jansen p.g.w.	2	178	89	51

Figure 8: Showing author-wise citation analysis

Co-authorship Analysis For Frequently Cited Authors The number of publications for a set of variables and their relationships to one another are shown by co-authorship. Using VOSviewer, an author co-citation analysis has been done for a better understanding of the theoretical development of 131 articles in the area of idiosyncratic deals. From the 131 papers that were chosen, references from 267 writers were found. For simplicity of analysis, we selected the authors with a minimum of 5 citations and with publishing minimum number of 2 documents; this resulted in 54 authors. Results depicted 5 clusters, 21 items, 45 links and total link strength to be 87. With 14 documents and 1254 citations, author Rousseau d.m. et al. rated first, with Hornung S. coming in second with 9 documents and 781 citations and Glaser J. coming in third with 7 documents and 674 citations. There are a total of eight authors with five or more documents.

Country co-authorship analysis

The country co-authorship network is one of the important approaches to scientific mapping, and its goal is to trace collaboration among countries. Figure 9 depicts global cooperation of countries co-authored at-least 2 idiosyncratic deals related research papers with 5 citations. The Total Link Strength (TLS) was employed to measure the degree of closeness of scholars of several countries (Ohlan & Ohlan 2022). Each circle represents a country, and the circle size directly reflects the number of co-authored publications based on TLS.

Similarly, the thickness of the edge is directly related to the link strength (LS). The network retains research papers originating from 21 countries. There were 6 clusters, 55 links (L), and 126 TLS in the network map. The top four countries with highest total link strength were the United Sates (L:14, TLS: 39), United Kingdom (L:16, TLS:39) and China with (L:8, TLS: 21). The United States had strong authorship collaborations with Hong Kong (LS:8), China (LS:7), Germany (LS:6). The next strong association is found among scholars from China and Hong Kong (LS: 6), Netherlands and United Kingdom (LS:6). Additionally, French and Canadian academics have cooperated (LS:5). Collaborations between American and British researchers as well as those from India were evident (LS: 2, LS:1).
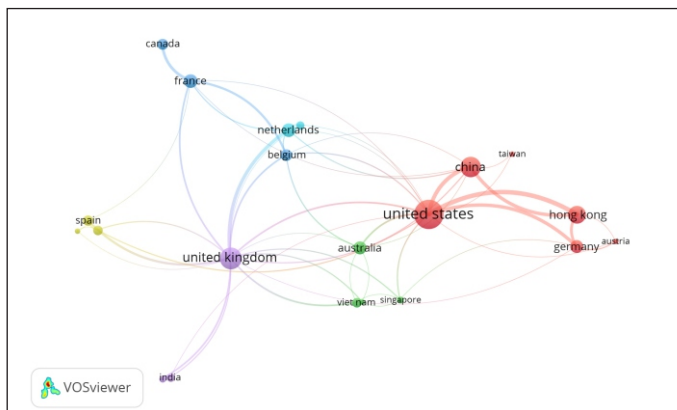
Figure 9: Co-authorship by country in studies on idiosyncratic deals

Keywords Co-occurrence Analysis

The primary goal of this section of the work was to examine the keywords utilised by previous authors. The outcome of an overlay visualisation is shown in Figure 10. The approach helped to identify the researchers' prior similar research interests (Scott and Lane, 2000; Sidorova et al., 2008). The co-occurrence of author keywords serves as a gauge for the most commonly used terms in the documents published. The information in Figure 10 was gathered using a comprehensive counting system. The size of the circle indicates how important a keyword is in relation to how often it appears. The analysis tool discovered 374 author keywords in total, however only 18 of these met the basic criteria of 3 appearances or occurrences. These 18 keywords were divided into 6 clusters, 35 links. As depicted in figure 6.3 "idiosyncratic deals" was the keyword most cited with 69 occurrences and the one with highest total link strength i.e., 40. Keyword "i-deals" depicted 24 occurrences and a total of 23 total link strength followed by keywords "social exchange theory" and "idiosyncratic deals (i-deals)" both sharing 6 occurrences each. Cluster one included four items namely i-deals, corporate social responsibility, Vietnam and performance. Cluster two (green color nodes) included 3

keywords including flexibility, flexible work hours and older workers. This cluster focuses on flexibility type of idiosyncratic deals. Cluster three (blue color) talks about outcomes based on idiosyncratic deals including organization based self- esteem, organizational citizenship behaviour and social exchange. Cluster four (yellow color nodes) included 3 keywords targeting emotional exhaustion, idiosyncratic deals and psychological contract basically focusing on negative consequences that can occur when idiosyncratic deals are offered. Evolving from social exchange theory, flexible/customized job design being the most prominent theme in year 2014, year 2019 saw the influx of research trends covering the outcome of i-deals by measuring work performance and emotional exhaustion that can be a prospective negative impact of i-deals. To the best of the researchers' knowledge, remarkably few studies have been found to demonstrate the potential negatives of engaging in idiosyncratic deals may cause. During year 2016-17, few studies dominated the research trend by checking the impact of i-delas by measuring productive behaviours at work such as employee's organizational citizenship behaviour, organization-based self-esteem etc.
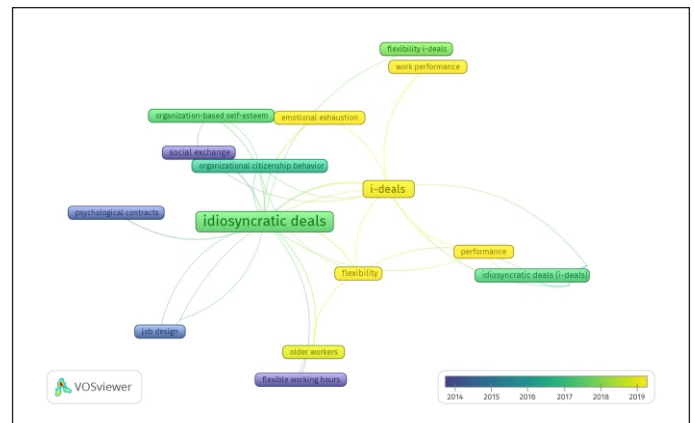

Figure 10: Co-occurrence of authors keywords in idiosyncratic deals Research

CO-CITATION –AUTHORS

This co-citation study continued to analyse the major contributions. There were 7720 total authors, but only 37 of them satisfied the minimum requirement of 50 citations. According to Figure 12 below, this analysis confirms the existence of four clusters with a total of 37 authors. The 10 most often referenced authors are rousseau, d.m. (1049 citation,37050 link strength), hornng, s. (375 citation,16137 link strength), glaser, j. (302 citation,13403 link strength), liden, r.c. (219 citation,10772 link strength), ho, v.t. (206 citation,9253 link strength), Greenberg, j. (181 citation,7755 link strength), bal, p.m. (167 citation,7460 link strength), anand, s. (159 citation,7853 link strength), bakker, a.b. (155 citation,7572 link strength), Vidyarthi, p.r. (136 citation,6892 link strength).
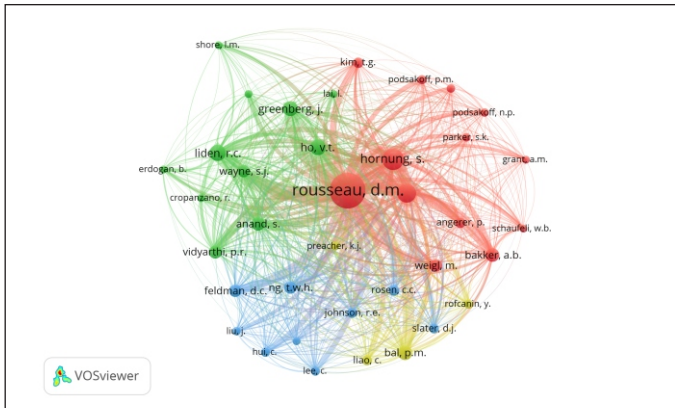
Figure 11: Depicting most co-cited authors in idiosyncratic deals research

Co-citation Journals Network Analysis

Co-citation of sources occurs when two journals amass citations in a third common journal (Ohlan, Ohlan & Chhikara, 2022). The frequency with which two publications are cocited shows the strength of connections between them. The findings of co-citation analysis help in charting core research topics, groups of authors, and communities in a research field. Over 2140 sources were cited in the analyzed Scopus data set. The minimum number of co-citations was set to 100 as threshold to be part of analysis. Out of 2140 sources, 11 data sources met the set criterion. Figure 12 below depicts the co-citation network of key sources cited in idiosyncratic deals research corpus. This network of knowledge base of the in idiosyncratic deals studies encompasses 2 clusters, with total link strength of 44355. Cluster one i.e., red coloured consists of 9 journals. "Journal of applied psychology" is the biggest node with 760 citations and 19420 being the total link strength. As indicated by the highest widget, this journal is largely co-cited with "Journal of organizational behaviour" (418 citations) followed by "Journal of Management" (396 citations) and "Academy of Management Journal" (389 citations). Green Nodes represents the cluster 2 consisting only 2 journals i.e., "Journal of personality and Social Psychology" (139 citations) being the biggest node of cluster 2 followed by "Organization behavior and human decision process" (109 citations).
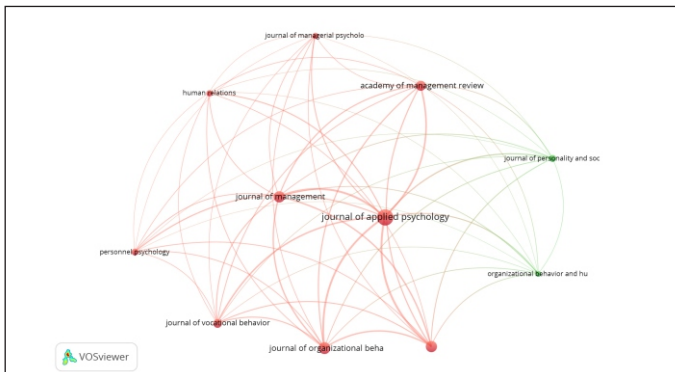

Figure 12: Co-citation of Journals

Bibliographic Coupling: Documents

This study uses VoSviewer to do an analysis of bibliographic coupling on our dataset to find core items (Klavans & Boyack, 2010). When two documents share a third document in their bibliographies, this is known as coupling and indicates that the two works have a similar subject matter. The method is widely used to achieve automatic clustering for large data sets as well as to determine which two articles in their bibliographies quote the same third work. After restricting the minimum citation criteria of fifty, out of 131 documents, 16 items were extracted, which identified into three clusters with a total link strength of 765 and the finding shows that, the most coupled documents are cluster 1: 9 items (red color) anand s. (2010), rosen c.c. (2013), matthijs bal p. (2012), liao c. (2016), lai l. (2009), ng t.w.h. (2010), ng t.w.h. (2015), de vos a. (2017) and liu j. (2013). Cluster one is the largest cluster the research theme starting development of i-deals, how it relates to employer-employee and impact on performance. Further, cluster 2 represented through green color nodes, four documents, Hornung S. (2008), Rousseau. d.m. (2001), Hornung d.m. (2009 and Hornung S. (2009). Cluster 2, research documents mainly focused on flexibility of job content, the timings and outcomes of i-deals. Cluster 3, three items (blue color) consist of Hornung S.(2010b) and Hornung S. (2014) with LS:31, grant a.m. (2010). This cluster theme mainly focused on redesigning the work, customizing job content through idiosyncratic deals. Figure below Shows the Bibliographical Coupling of Documents.
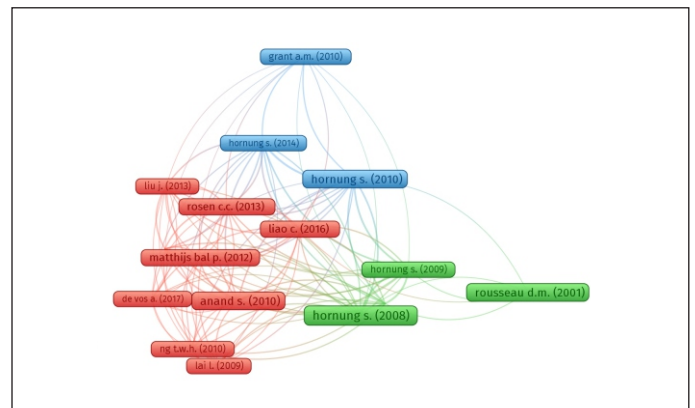

Figure 13: coupling of documents

Bibliographical Coupling Of Authors

A pair of authors are said to be coupled when they both include the same third author in their bibliographies, indicating that the subject matter of the coupled work is the same. After restricting the minimum citation of an author to be five and having minimum of two documents, out of 267 authors from 131 articles, 54 authors met the threshold criteria.

54 nodes, 6 clusters, TLS:100369, cluster 1(green) 14 items, cluster 2 (green color) 12 items, cluster 3 (blue) 10 items, cluster 4 (yellow) 9 items, cluster 5 (brown) 7 items, cluster 6 (pink) 2 items.
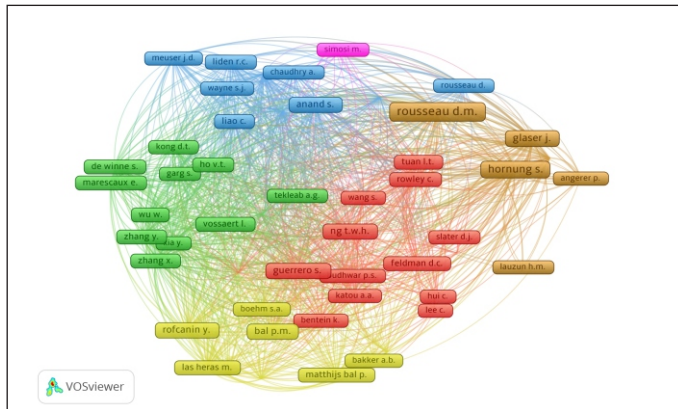

Figure 14: Coupling of authors

Bibliographical Coupling Of Sources

After restricting the minimum citation criteria of a source to five and two being the minimum number of documents of a source, out of the 72 sources, 20 met the threshold limits. These 20 items were identified into three clusters having total link strength to be 14475. Cluster one (red color) included 7 items/sources bring lead by International Journal of human resource management having six documents published with links having 19 and total link strength equals to 2761 sharing a strong association with Journal of Organizational behaviour (LS:277). Cluster two (green color) included 7 items, 6 documents published with 19 links and 2562 total link strength. The Journal of vocational behavior showed strong links (LS:254) with the Journal of human resource management.
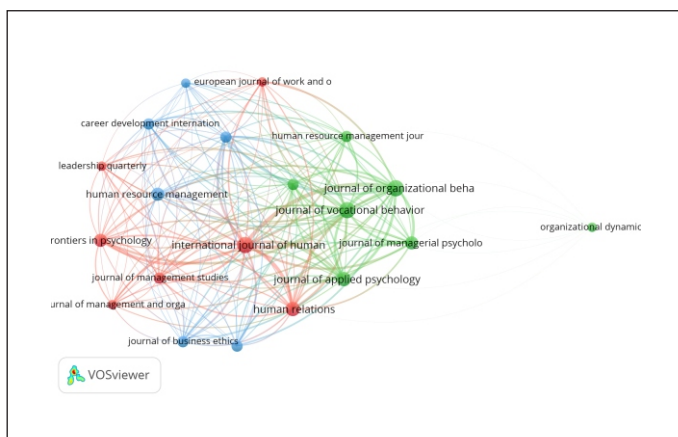

Figure 15: Coupling of Journals

8. Conclusion

The conclusions based on the results and analysis are summarised in this section. The current study contributes to a better understanding of the state of idiosyncratic deal research at this time. No bibliometric analysis study researchers could be found on idiosyncratic deals, so it is first kind of study and contribution to the literature. This research has been done over a 22-year period (from August 2001 to August 2022), spanning the whole period of publication in this topic and enabling the creation of a thorough. To begin with, individualised employment arrangements through i-deals have recently acquired traction as a research area with an increase in publications and relevance. In year 2001, for the first time this research title was introduced and the topic started drawing attention from researchers. The most common themes identified from the documents' keywords in the i-deals research domain is the flexible work design, idiosyncratic deals, career development, work performance and psychological contract. There has been a rise in research studies in the field and a substantial impact on the growth of personalized/customized work settings during the past ten years. A number of themes encompassing a broad range of the i-deals research agenda have been discovered, as shown in the source (article) analysis. The US, UK, and China are the nations with the most publications. However, 131 distinct and pertinent papers were taken from Scopus bibliometric databases, leading the authors to believe that there is a dearth of study in the area. It is clear that the evolution of idiosyncratic deals is just getting underway. Positive outcomes in the form of OCB, OBSE, work performance, and OC-related themes dominated publishing patterns in the area, as was shown from the data, which constrained the scope of the investigation.

Theoretical implications

This study can benefit researchers in identifying new themes and trends in organizational behaviour and human resource domain. A research gap which has been highlighted by this study, can be used by researchers for future research directions. The authors' suggestion is that there is a pressing need to integrate the personalized work arrangements through idiosyncratic deals research with interdisciplinary domains and look into new publication trends that are focused on the issues and difficulties that organisations and employers will face if employees are given the option of customised work environments.

Practical Implications

I-deals have been more prevalent recently in research literature, which can be ascribed to shifting individual, organisational, global, and labour market circumstances (Farber & Western, 2000). Individual changes might include increased competition

for employee talent, increased employee negotiability, and increased need for career advancement (Farber & Western, 2000; Michaels et al., 2001) whereas environmental changes might involve the changing nature of work (Blakely et al., 2003) changes in the labour market, a decline in trade unionism, and increased career opportunities interested in employee multi-skills in organisations (Michaels et al., 2001). As a flexible, voluntary and creative Idiosyncratic deals give employers and employees the chance to work through challenges by discussing specific tasks and/or reassigning fundamental responsibilities, with the end goal being increased general workplace productivity. Idiosyncratic agreements are successful because they consider the person's abilities, interests, and specific circumstances as well as the demands of the employer. This results in a distinctive work description that portrays a personalised relationship. The goal of idiosyncratic deal is to match a worker's profile to a set of job duties that will enable an employer satisfy a particular demand and expectation that is tailored to their needs or other unique situations. The concept of idiosyncratic deals is becoming a global phenomenon because of continuous focus shifting of organisations towards work-life balance, personalized work arrangements, work from home and workforce development etc. So, organisations need to tailor their work-related policies as per the changing workforce demands and need of the hour, as the ultimate goal is to achieve organisational goals by aligning them with individual goals and needs.

Directions For Future Research

One method for attracting and keeping workers of different skill levels is through the creation of unique work arrangements. Employers must act favourably in response to the rising demand for workplace flexibility in recent years. Idiosyncratic deals are a potent instrument in the toolbox of the HR professional's diversity-increasing methods, with special applicability to people with perceived impediments to job success, improved productivity, and higher satisfaction. Authors recommend to pay attention towards the negative consequences of idiosyncratic deals, the different types of i-deals offered to employees. Future researchers need to figure out how workplace fairness can be maintained if customized work settings are practiced at workplace. Future researchers should take into account a few limitations of the current work. To give an example, the necessary bibliometric data from the Scopus database alone was extracted in order to condense the study. The study ignored articles in languages other than English, such as French, Spanish, Dutch, and Chinese, which may offer fresh, insightful knowledge about i-deals if studied in the future. The study solely took into account publications in English.

11. References

- Bastidas-Manzano, Ana-Belén, Juan Sánchez-Fernández, and Luis-Alberto Casado-Aranda. 2021. "The Past, Present, and Future of Smart Tourism Destinations: A Bibliometric Analysis." Journal of Hospitality & Tourism Research 45(3):529–52.

- Bjork, Samuel, Avner Offer, and Gabriel Söderberg. 2014. "Time Series Citation Data: The Nobel Prize in Economics." Scientometrics 98(1):185–96.

- Caviggioli, Federico, and Elisa Ughetto. 2019. "A Bibliometric Analysis of the Research Dealing with the Impact of Additive Manufacturing on Industry, Business and Society." International Journal of Production Economics 208:254–68.

- Cobo, Manuel J., Antonio Gabriel López-Herrera, Enrique Herrera-Viedma, and Francisco Herrera. 2011. "Science Mapping Software Tools: Review, Analysis, and Cooperative Study among Tools." Journal of the American Society for Information Science and Technology 62(7):1382–1402.

- Donthu, Naveen, Satish Kumar, Debmalya Mukherjee, Nitesh Pandey, and Weng Marc Lim. 2021. "How to Conduct a Bibliometric Analysis: An Overview and Guidelines." Journal of Business Research 133:285–96.

- Donthu, Naveen, Satish Kumar, and Debidutta Pattnaik. 2020. "Forty-Five Years of Journal of Business Research: A Bibliometric Analysis." Journal of Business Research 109:1–14.

- Evren, Savas, and Nazmi Kozak. 2014. "Bibliometric Analysis of Tourism and Hospitality Related Articles Published in Turkey." Anatolia 25(1):61–80.

- Fagerberg, Jan, Morten Fosaas, and Koson Sapprasert. 2012. "Innovation: Exploring the Knowledge Base." Research Policy 41(7):1132–53.

- Farber, Henry S., and Bruce Western. 2000. "Round up the Usual Suspects: The Decline of Unions in the Private Sector, 1973-1998."

- Garrigos-Simon, Fernando J., Yeamduan Narangajavana-Kaosiri, and Yeamdao Narangajavana. 2019. "Quality in Tourism Literature: A Bibliometric Review." Sustainability 11(14):3859.

- Hollebeek, Linda D., Tripti Ghosh Sharma, Ritesh Pandey, Priyavrat Sanyal, and Moira K. Clark. 2021. "Fifteen Years of Customer Engagement Research: A Bibliometric and Network Analysis." Journal of Product & Brand Management.

- Hornung, Severin, Denise M. Rousseau, Matthias Weigl, Andreas Mueller, and Juergen Glaser. 2014. "Redesigning Work through Idiosyncratic Deals." European Journal of Work and Organizational Psychology 23(4):608–26.

- Landström, Hans, Gouya Harirchi, and Fredrik Åström. 2012. "Entrepreneurship: Exploring the Knowledge Base." Research Policy 41(7):1154–81.

- Liao, Chenwei, Sandy J. Wayne, and Denise M. Rousseau. 2016. "Idiosyncratic Deals in Contemporary Organizations: A Qualitative and Meta-analytical Review." Journal of Organizational Behavior 37: S9–29.

- Lima Santos, Luís, Lucília Cardoso, Noelia Araújo-Vila, and Jose A. Fraiz-Brea. 2020. "Sustainability Perceptions in Tourism and Hospitality: A Mixed-Method Bibliometric Approach." Sustainability 12(21):8852.

- Lu, Jiaying, and Sanjay K. Nepal. 2009. "Sustainable Tourism Research: An Analysis of Papers Published in the Journal of Sustainable Tourism." Journal of Sustainable Tourism 17(1):5–16.

- Mavric, Bartola, Mert Öğretmenoğlu, and Orhan Akova. 2021. "Bibliometric Analysis of Slow Tourism." Advances in Hospitality and Tourism Research (AHTR) 9(1):157–78.

- Merigó, José M., and Jian-Bo Yang. 2017. "Accounting Research: A Bibliometric Analysis." Australian Accounting Review 27(1):71–100.

- Mukherjee, Debmalya, Satish Kumar, Naveen Donthu, and Nitesh Pandey. 2021. "Research Published in Management International Review from 2006 to 2020: A Bibliometric Analysis and Future Directions." Management International Review 1–44.

- Nusair, Khaldoon, Irfan Butt, and SR Nikhashemi. 2019. "A Bibliometric Analysis of Social Media in Hospitality and Tourism Research." International Journal of Contemporary Hospitality Management.

- Pérez-Gutiérrez, Mikel, José Manuel Castanedo-Alonso, Marifa Salceda-Mesa, and Carlos Cobo-Corrales. 2021. "Scientific Production on Inclusive Education and Physical Education: A Bibliometric Analysis." International Journal of Inclusive Education 1–17.

- Podsakoff, Philip M., Scott B. MacKenzie, Nathan P. Podsakoff, and Daniel G. Bachrach. 2008. "Scholarly Influence in the Field of Management: A Bibliometric Analysis of the Determinants of University and Author Impact in the Management Literature in the Past Quarter Century." Journal of Management 34(4):641–720.

- Ramos-Rodríguez, Antonio-Rafael, and José Ruíz-Navarro. 2004. "Changes in the Intellectual Structure of Strategic Management Research: A Bibliometric Study of the Strategic Management Journal, 1980–2000." Strategic Management Journal 25(10):981–1004.

- Rousseau, Denise M., Violet T. Ho, and Jerald Greenberg. 2006. "I-Deals: Idiosyncratic Terms in Employment Relationships." Academy of Management Review 31(4):977–94.

- Sigala, Marianna. 2021. "A Bibliometric Review of Research on COVID-19 and Tourism: Reflections for Moving Forward." Tourism Management Perspectives 40:100912.

- Sigala, Marianna, Satish Kumar, Naveen Donthu, Riya Sureka, and Yatish Joshi. 2021. "A Bibliometric Overview of the Journal of Hospitality and Tourism Management: Research Contributions and Influence." Journal of Hospitality and Tourism Management 47:273–88.

- Suban, Syed Ahamed, Kumar Madhan, and Shameem Shagirbasha. 2021a. "A Bibliometric Analysis of Halal and Islamic Tourism." International Hospitality Review.

- Suban, Syed Ahamed, Kumar Madhan, and Shameem Shagirbasha. 2021b. "A Bibliometric Analysis of Halal and Islamic Tourism." International Hospitality Review.

- Van Raan, AF. 2014. "Advances in Bibliometric Analysis: Research Performance Assessment and Science Mapping." Bibliometrics Use and Abuse in the Review of Research Performance 87:17–28.

- Xu, Li Da, Eric L. Xu, and Ling Li. 2018. "Industry 4.0: State of the Art and Future Trends." International Journal of Production Research 56(8):2941–62.

- Zupic, Ivan, and Tomaž Čater. 2015. "Bibliometric Methods in Management and Organization." Organizational Research Methods 18(3):429–72.

Study of Website Attributes Impacting Apparel Purchase Intentions from Favourite Website

Vaishali Pardeshi *
Dr. Vandana T. Khanna**

Abstract

The basic purpose of this study was to identify the web attributes impacting the apparel purchase intention of women from their favourite website. Survey data from women in Mumbai aged 18-55 with the online clothing shopping experience. Three apparel website attributes were identified by factor analysis (i.e. 'Responsiveness', 'Product & Customer Care Information' and 'Purchase Assistance'). Multiple regression results exhibited that 'Responsiveness' and 'Purchase Assistance' were showing statistically significant relationship with Women's Online Purchase Intentions of women from their favourite website. The results also exhibited that 'Product and Customer Care Information' factor did not show significance. The above research findings imply that website retailers should concentrate on designing more responsive and purchase assistive website rather than concentrating on product and customer care information. This insight would help retailers to design strategies for maintaining customer loyalty toward the website.

Keywords- *Online Shopping, Responsiveness, Product and Customer Care Information, Purchase Assistance, favourite website.*

Introduction

IOver the past two decades, online shopping has grown rapidly. People spend a large amount of time at work and commuting resulting in decreased disposable time for shopping. The traditional Brick and Motor approach for shopping is shifting gradually towards online with the advent of the internet (Reddy, R., (2018)). The Indian e-commerce industry is projected to be Rs 13,97,800 crore (US$ 200 billion) by 2027 from Rs 2,69,076.5 crore (US$ 38.5 billion) in 2017. This growth is fueled by rising incomes and an increase in the number of internet users and digital devices (Kaka, N., et.al, (2019)). On e-commerce portals, apparel is the most sold category as compared to other categories (Bansal, K, (2019)). Apparel e-tailing in India is considerably growing and is presently projected at $70Bn, out of which one fourth is from the organized retail market. Women are more interested in shopping for clothes and it is found that they shop for apparel more than men (Dennis, C., et al., (2009)). The percentage of women shopping online for apparel has grown to 45 % are which was earlier 28% with Mumbai grabbing the top position (Amit, G., (2017)). The predictable value of the Women's apparel market is projected to reach a CAGR of 9.9 % and is estimated to be the US $44 billion by 2026 from US $17.5 billion in 2016 (Amit, G., (2017).

The e-commerce apparel portals offer convenience, time-saving, comprehensive information on products, ease of transactions and flexibility (Jiang, L., et al. (2013)). Apparel websites offer consumers a personalized experience, facilitate the evaluation of product quality, ease of product return and user-friendliness (Kamarulzaman, Y., (2011)). The facility to compare a product on the same, as well as on other websites, helped them in making better buying decisions (Johnson, E., et. al, (2004)). Consumers found online shopping to be exciting, pleasurable, stimulating, and simple (Passyn, K., et.al, (2011)). Women prefer online apparel shopping as they can shop at home and workplace (Mishra, A., &Samu, S. (2018)). The ecommerce apparel portals offer a wide range of brands, colours, category styling tips, and evenhave numerous payment choices (Kim, M., et al., (2006)). The above website attributes have a significant impact on the purchase intentions of women. There is fierce competition between online apparel portals to stay relevant and profitable in business (Sarv, D., (2009)). The online retail managers are carefully designing website attributes to lure and retain women customers on their favourite websites (website on which they frequently shop apparels) (Pardeshi, V., & Khanna, V. (2021). Thus, considering the huge potential of women's online apparel segment in metro cities of India the

Assistant Professor, Kohinoor Business School Mumbai,
 Email: vaishaliincthane@gmail.com
**Professor, K.J. Somaiya Institute of Management Studies and Research, Mumbai,*
  Email: vandanat@somaiya.edu

study of website attributes impacting apparel purchase intentions from favourite website is of paramount significance.

2. Literature Review

Website attributes are important to design and generate a positive perception of the usefulness and informativeness of the website (Pardeshi, V. H., & Khanna, V. (2020)). The website layout must be easily navigable so that the user can find the products and services comfortably (Zheng, X., et.al (2017)). As per the studies by Lin, it was found that a well-designed website increases customers satisfaction leading to a tendency of repeat purchase (Lin, G., & Sun, C. (2009)). Website attributes such as financial and personal security, loading of images, transaction time, product availability, customer service have a main impact on consumers' purchase intention (Chincholkar, S., &Sonwaney, V. 2017). Customer care attributes such as reliable/quick responses, access, ease of use, attentiveness, security, and trustworthiness are crucial fundamentals of a website (Jun, M. et. al, 2004). Website content/functionality, atmospheric/experiential quality, privacy/security, and customer service have a significant impact on e-shopping satisfaction, contributing to e-shopping intention (Ha, S., &Stoel, L. 2012).

It was also found that product-related information such as verbal descriptions, visual assistances such as photos, videos, and audios, improved consumers experience resulting in reduced risk perception and increased shopping intention (Kim, J. H., & Lennon, S. J. (2010). The website with attributes like interactive chat function, a video presentation, and a personalized shopping experience was found to make the internet shopping experience more pleasurable (Kim, J. H. et. al, 2007). Website having personalized attributes, interactivity, alluring virtual experience and product information helped consumers purchasing decisions (Yang, K., & Young, A. P. 2009). As per the studies by Zui, a website is judged by the ease of locating products, its information and the colour scheme, attractiveness, and website layout (Lee, Z. C. R., & Paul, D. 2012). The e- CRM attributes on websites such as chat rooms, e-mails directly were observed to improve loyalty towards the websites (Lee-Kelley, l., et al., (2003)). Technology attributes such as shopping agents and e-recommender were found to influence customers e-loyalty and website revisit (Feinberg & Kadam, 2002; Fjermestad, J., & Romano, 2003). The e-tail store image attributes such as quality of e-merchandise, quality of e-service, and e-tail shopping atmosphere also help to increase e-loyalty (Zee-Sun, Y., & Good, L. (2007)).

The findings of the research done by Ling revealed that impulse buying intention, qualityand brand consciousness, trust in online channels and its previous buying experience had an impact on online purchase intention (Ling, K.C., et.al. 2010). It was found that customers trust in the online web retailer and previous online shopping experience had a positive impact on the online purchase intention (Thamizhvanan, A., & Xavier, M. J. (2013)). The studies by park revealed that internet shoppers who have previous online purchase experience were confident of buying apparel online compared to those who do not any prior buying experience online. Prior online purchase experience helped to reduce the perception of risk and helps to increase intention (Jihye, P., & Leslie, S. (2005)). The studies done by Gefen revealed that previous experience of online shopping increased intentions to use the internet for future shopping and also increased perceptions about the ease of use and usefulness of online shopping (Gefen D., (2003)). It was found if the consumers feel confident with a website his purchase intention towards it will increase (Bhaduri, G., & Kim, J. 2018). If the consumer identifies with the website, there is a tendency to shop more from it leading to higher purchase intention (Bhattacharya, C. B., & Sen, S. 2003). Marketing tactics used in traditional retail marketing such as the use of coupons, discounts, and give ways certainly can be used to shape subjective norms and drive consumer impulsivity leading to purchase intentions (Zhang, X., et.al. (2007)).

Based on the above studies, it can be concluded that website attributes play a major role in customer online purchase intentions. Considering the market potential, it is vital to retain and focus on the growth of the online women's apparel segment. To attain high growth, the apparel websites must be designed in such a way that women shoppers are attracted and retained. Thus, this research concentrates on exploring the web attributes that influence the women shoppers apparel purchase intentions from their favourite website. The study focuses on women staying in Mumbai and buying apparel from their favourite apparel website.

3. Methodology

An online questionnaire was used to gather the responses from the respondents. The sample consisted of women staying in Mumbai who shopped apparel online. The women aged between 18-55 years were considered. A survey included demographic items such as marital status, age, occupation, education, kids, and family income. The questions were derived from the literature review and the items were modified to fit the purpose of this research. The variables were measured using the five-point Likert scale (1=' strongly disagree' to 5='strongly agree'). The survey scale consisted of 19 items and a total of 450 valid responses were considered for the study. Quota Sampling Technique was used to select the sample of respondents. The reliability and validity of the questionnaire were measured using Cronbach's alpha and Factor Analysis. Finally, the Multiple Regression Technique was used to measure the impact of each factor on women's online apparel urchase intentions from their favourite website.

3.1 Reliability and Validity Test

The Reliability analysis was carried out on the perceived scale value of 19 items. The Cronbach's Alpha showed the questionnaire reached acceptable reliability α = 0.953. Most of the items appeared worthy of retention and thus all were considered. Table 1 shows the reliability statistics based on Cronbach's Alpha.

Table 1: Reliability Statistics.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
0.953	0.954	19

Table 1: Reliability Statistics.

Kaiser-Meyer- Olkin Measure of Sampling Adequacy.		0.949
Bartlett's Test of Sphericity	Approx. Chi-Square	6726.167
	Df	171
	Sig.	0.000

The KMO was 0.949 (between 0.5 and 1.0) which is considered excellent to perform factoranalysis. The Barlets Test of Sphericity showed significance as 0.000 which is less than (0.005) showing that the variables are correlated. This means Factor Analysis could be performed on thevariables. Table 2 shows the results of KMO and Bartlett's Test. Exploratory Factor Analysis was used to identify a set of hidden constructs. It is applicable when the researcher does not have a prior hypothesis about the factors or patterns of measured variables thus, it is used in the current study.

Table 3: Identified factors on Perception of Preferred Website Attributes.

Factor Name	Variables	Factor Loadings	Eigen Value	Percentage of Variance	Cronbachs Alpha
Shopping and Ordering Assistance	I can Browse the Apparel Website Easily	0.835	10.48	47.01	0.952
	I can Quickly Shop and Order the Apparel	0.817			0.952
	I can do Comparison of Competitors Apparel	0.539			0.952
	I can Easily Track My Orders	0.758			0.951
	I Quickly Receive the Ordered Apparels	0.691			0.951
Product and Customer Care Information	It (Website) shows All available Colours and Sizes of the Apparel	0.614			0.951
	It (Website) shows Detailed Information about the Apparels (clothes) Quality	0.593	1.401	7.372	0.949
	It (Website) shows Quality Photographs of the Apparel (Clothes)	0.668			0.949
	It (Website) shows Sizing Chart	0.653			0.949
	It (Website) facilitates of Easy Return and Pick-up	0.709			0.950
	It (Website) has Quick Money-Back Option for the Returned Apparel (clothes)	0.743			0.949
	It (Website) has the Option for Recheck and Reconfirm the Order details	0.719			0.950
	It (Website)Assures Safety of Credit/DebitCard /Net-banking details and other Personal Details	0.694			0.950
	It (Website) assists in Customer Care	0.757			0.950
Purchase Assistance	It (Website) notifies new Apparel updates	0.685	2.301	8.119	0.952
	Switching between Web-pages should be Easy and Quick	0.682			0.950
	Website loads the Apparel Images Quickly	0.728			0.950
	It (Website) has Video Display of the Apparel	0.722			0.952
	It (Website) gives Style tips for the Apparel	0.723			0.950

Table 3 shows the correlation of the variables with each extracted factor. Based on the principal components analysis and VARIMAX the results also showed that the Eigenvalues for all the constructs were greater than 1.0. In terms of convergent validity, the factor loadings for all items within a construct were more than 0.50. Discriminant validity indicated that all items were allocated according to the different constructs. The items were not overlapping.

To identify the variables in each factor, the variable with the maximum value in each row wasselected to be the part of the individual factor. Nineteen questions based on women favourite apparel website from which they purchase in the last one year were analyzed using principal component analysis using Varimax. The analysis yielded three factors explaining a total of 62.502% of the variance for the entire set of variables. Factor 1 was labelled as 'Responsiveness' due to the high loading of the items that relate to the response of the website. The first factor explained 47.01% of the variance. The second factor was labelled as 'Product and Customer Care Information' due to the high loadings of the items that related to customer care and product information availability on the. The second factor explained variance of 7.37 %. The third factor was labelled as 'Purchase Assistance' due to the high loadings of the items that related to decisions making while purchasing apparel product. The third factor explained variance of 8.119 %.

3.2 Framing of Hypothesis

To gain a competitive advantage, the web store must have an interactive and responsive design. The interactive design makes buying easy, reduces time and effort. A responsive website reduces the time required to browse for products and services. If a website is responsive the user spends a large amount of time on the website and also revisits the website in future for buying. It becomes difficult to keep the shoppers engaged on the unresponsive website leading to the possibility of the user switching to the other website (Lili, (2020)). According to Huang, responsiveness is the degree to how the website responds to the user needs. A responsive website induces curiosity and makes navigation easy (Huang, M. H., (2003)). Responsive e-Commerce web applications are found to have easy to follow navigation path that meets customers informational needs. This also facilitates easy access to product details, quick payment method, fast order processing and delivery methods (Santiworarak, L., &Choochaiwattana, W., (2018)). The studies done by Sareen revealed that facilities like a search engine, navigation path, tracking system, quick loading and quick responses, increase the consumers revisit on the website (Sareen, M., & Jain, A., (2014)).

One of the most important features of an apparel portal is its ability to effectively display product and customer care related Information. The website should display price, product description, suggestion of similar products and have a good interface design that helps in searching the product (Detlor, B.et.al. 2003). The study by Park, reveals that good product information on the website leads to an increase in the sale of apparel while sparse information on the website may lead to fewer purchases (Park, J. H., &Stoel, L. (2002)). The evaluation of service information and perception of security affects the assessments of websites as consumers perceive it to reduce transactional cost and risk. This increases consumer's commitment towards the website and the actual purchases (Park, C. H., & Kim, Y. G. (2003)). As per the study done by Hwan, visual product presentation, privacy and security statements, information about the company and product guarantee were considered as highly relevant for goal-oriented shopping (Kim, J. H, et.al, (2007)).

Purchase assistance web attributes play an important role in helping the customers to make better purchase decisions. The study by Bhatti states that visual product presentations make online shopping more pleasurable for a consumer (Bhatti., A., et al. (2021)). A better pictorial product can make online shopping is less risky and more pleasurable than offline shopping (Kim, M. J., & Park, J. (2005)). The study by Kim revealed that moving images have a better impact on customers mood as compared to still images while engaging in online shopping. (Kim, M., et.

Al., (2005)). The study by Tamimi found that instant notification of orders and product update are essential areas that need improvement for enhancing purchase decision in online shopping (Tamimi, N., et.al., (2003)).

Based on earlier the above studies and results the conceptual frame (Fig 1) and the hypothesis are postulated.

H1: Shopping and Ordering Assistance website significantly impact customers apparel

purchase intention from the favourite website.

H2: Product and Customer Care Information significantly impacts customers apparel purchase intention from the favourite website.

H3: Purchase Assistance significantly impacts customers apparel purchase intention from the favourite website.
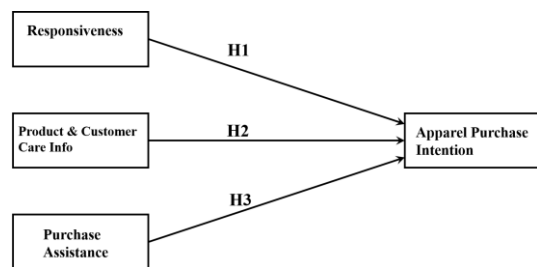

Fig 1. Conceptual Framework

4.0 Results and Discussion

Multiple regressions can provide valuable understandings when predicting human behaviour, as human actions, opinions, and feelings are more likely to be biased while mixing numerous factors (Gianie Abdu, P. (2013). Multiple Regression can be used to test theories about exactly which set of variables is affecting human behaviour. Multiple regression was carried out to investigate whether Factor 1 'Responsiveness', Factor 2 'Product and Customer Care Information' and Factor 3 'Purchase Assistance" affected women's apparel purchase intention from their favourite website.

The results of the regression indicated that the model explained 8.8 % of the variance and that the model was a significant predictor of women's apparel purchase intention, $F_{(2,473)} = 22.781$, p = 0.000. Adjusted R square=0.084. Table 4 shows the model summary and table 5 shows ANOVA results.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error Of the Estimate
1	0.296[a]	0.088	0.084	0.931

a. Predictors: (Constant), Responsivness, Product and Customer Care Information

Table 5: ANOVAb

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	39.502	2	19.751	22.781	0.000[b]
Residual	410.100	473	0.867		
Total	449.603	475			

a. Dependent Variable: Over the past one year after finding the apparel on your favourite website, how often did you buy apparel online from it?

b. Predictors: (Constant), Responsiveness, Product and Customer Care Information, Purchase Assistance

The Regression Coefficientsare shown in table 6. The factors 'Responsiveness' (β = 0.309 p=0.000),'Product and Customer Care Information' (β = -0.017, p=0.801) and 'Purchase Assistance'(β = 0.309 p=0.000) significantly contributed to the model. The final predictive model was:

Purchase Intension = 1.726 + (0.309*Responsiveness) + (-0.017* Product and Customer Care Information) + (0.502* Purchase Assistance)

Table 6: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta (β)		
(Constant)	1.726	0.250		6.904	0.000
Responsiveness	0.071	0.015	0.309	4.665	0.000
Product and Customer Care Information	-0.002	0.007	-0.017	-0.253	0.801
Purchase Assistance	0.051	0.025	0.502	3.263	0.000

a. Dependent Variable: Over the past One Year, after finding the apparel on the website, how often did you buy apparel online??

The summary of the results of regression analysis is shown in Table 7. The p-value of the 'Responsiveness' (p = 0.000) is less than the alpha value of 0.05. Thus, the research concludes that

'Responsiveness' is positively related to customer online apparel purchase intention and hypothesis 1 is supported. This result confirms with earlier studies by Szymanski which states

that shopping would be a satisfying and pleasurable experience if the website is Responsive. A Responsive can save time and

prove ease of shopping evoking a positive perception of convenience and e-satisfaction (Szymanski, D. M., &Hise, R. T. (2000)). The p-value of 'Product and Customer Care Information' (p = 0.801) is greater than the alpha value of 0.05. Thus, the research concludes that 'Product and Customer Care Information' is not positively related to the customer online purchase intention. Hypothesis 2 is not supported. Thisresult contradicts with earlier studies which state the positive impact of product and customer care feature on purchase intention (Khan, S. A., et.al., (2015)), (Putro, H. B., & Haryanto, B. (2015)), (Detlor, B. et.al. (2003)).

The p-value of 'Purchase Assistance' (p = 0.000) is less than the alpha value of 0.05. Thus, the research concludes that 'Purchase Assistance'' is positively related to the customer online apparel purchase intention. Hypothesis 3 is supported. This also falls in line with previous research which states that visual information and promotional information in form of updates or notification affect search and decision making (Tamimi, N., et.al., (2003)), (Kim, M. J., et.al., (2005)).

Table 3: Document-wise citation analysis

Hypothesis	p value	Decision	Remark
H1	0.000	Accepted	Contribute to model
H2	0.801	Rejected	Does not contribute to model
H3	0.000	Accepted	Contribute to model

5.0 Limitations and Future Scope of the Research

The research gives valuable inputs to online retailers and the academic community. The findings of the research have some limitations. This research work focuses on online apparel women shoppers and does not include offline apparel women shoppers. Thus, the results cannot be generalized for a larger segment. Since only women online shoppers are selected as sample, the influence of gender on purchase intentions is not be evaluated. This work considers only women residing in Metros (Mumbai) hence, the findings cannot be applied to Tier -II and rural areas. The study focuses on three factors influencing online apparel purchase intention which may not be adequate to understand the consumer's holistic behaviour. Considering the above limitations, some future work can be proposed. A comparative study of purchase intention of online and offline women shoppers can be done. A comparative study of web attributes assessment and purchase intention of women between metro cites and Tier II/rural areas can be done. The gender-based assessment purchase intention can also be studied. More number factors influencing consumers purchase intentions can be analyzed.

6.0 Conclusion

The research finding has several implications for online retail managers, academicians, and stakeholders. Earlier studies on web attributes had found that Product and Customer Care information are the most important attributes affecting purchase intentions. Major website nowadays has detailed product and customer care information. Thus, Product and Customer Care information is not a novel factor for consumers. The findings of this study reveal that 'Responsiveness' and "Purchase Assistance' are more important factors than 'Product and Customer Care information' impacting the purchase intention from the favourite website. The customers look for website Responsiveness and want the website to be fast, easy to track orders, receive an update of their orders and compare products. The customers want their websites to assist them in making better purchase decision by providing them with product images, videos and style tips. Thus, the online retail managers should emphasize designing a website that offers ease of browsing, quick shopping and ordering, ease of tracking, provision for comparison, fast delivery, images, videos and style tips. This would help the consumer to make better and quick purchase decisions, thereby increasing loyalty, satisfaction, retention, and future purchase intentions from their favourite website. The above research findings provide deep insights for the e-retailers to formulate and implement effective website design strategies.

11. References

- Tamimi, N., Rajan, M., &Sebastianelli, R. (2003). The State of Online Retailing. Internet Research, 13(3), 146-55.

- Amit, G., (2017). The Indian fashion apparel market – 2017 & beyond. Retrieved on 11th November 2019 from https://www.indiaretailing.com/2017/10/15/fashion/india n-fashion-apparel-market-2016-beyond/attachment/ fastfashion-3

- Bansal, K. (2019). Analysis of Online Shopper Behaviour and Identification of Choice Drivers for Women's Wear, Masters Dissertation. National Institute Of Fashion Technology, Mumbai, 40-47.

- Dennis, C., Merrilees, B., Hansen, T., & Jensen, J. M. (2009). Shopping orientation and online clothing purchases: the role of gender and purchase situation. European Journal of Marketing, 43(9/10), 1154-1170.

- Detlor, B., Sproule, S., & Gupta, C. (2003). Pre-purchase online information seeking: Search versusbrowse. Journal of Electronic Commerce Research, 4(2), 72-84.

- Fjermestad, J., & Romano, N. C. (2003). Electronic customer relationship management. Business Process Management Journal, 9(5), 572-591.

- Gefen, D. (2003). TAM or just plain habit: A look at experienced online shoppers. Journal of Organizational and End User Computing (JOEUC), 15(3), 1-13.

- Gianie Abdu, P. (2013). Analysis of consumer behaviour affecting consumer willingness to buy in 7-eleven convenience store. Universal Journal of Management, 1(2), 69-75.

- Huang, M. H. (2003). Designing website attributes to induce experiential encounters. computers in Human Behavior, 19(4), 425-442.

- Jiang, L. A., Yang, Z., & Jun, M. (2013). Measuring consumer perceptions of online shopping convenience. Journal of Service Management, 24(2), 191-214.

- Jihye, P., & Leslie, S. (2005). Effect of brand familiarity, experience and information on online apparel purchase. International Journal of Retail & Distribution Management, 33(2), 148-160.

- Johnson, E. J., Moe, W. W., Fader, P. S., Bellman, S., & Lohse, G. L. (2004). On the depth and dynamics of online search behavior. Management science, 50(3), 299-308.

- Kaka, N., Madgavkar, A., Kshirsagar, A., Gupta, R., Manyika, J., Bahl, K., & Gupta, S. (2019). Digital India: Technology to transform a connected nation. McKinsey Global Institute, March.

- Kamarulzaman, Y. (2011). E-consumer behaviour: Exploring the drivers of e-shopping. European Journal of Social Sciences, 23(4), 579-592.

- Kim, J. H., Kim, M., & Lennon, S. J. (2007). Information components of apparel retail web sites: task relevance approach. Journal of Fashion Marketing and Management, 11(4), 494-510.

- Kim, M., Kim, J. H., & Lennon, S. J. (2006). Online service attributes available on apparel retail web sites: an E S QUAL approach. Managing Service Quality: An International Journal, 16, 51-77.

- Lee-Kelley, L., Gilbert, D., &Mannicom, R. (2003). How e-CRM can enhance customer loyalty. Marketing Intelligence & Planning, 21(4), 239-248.

- Lili, (2020). Why Responsivness Design Important for E-commerce store? Retrieved on 22nd April 2020 from https://www.creative-tim.com/blog/web-design/why-Responsivness-design-important-forecommerce-store/

- Mishra, A., &Samu, S. (2018). Sales: plunging into online mode for shopping.Retrieved on 24th April 2020 from http://www.businessworld.in/article/Sales-Plunging-Into-Online-Mode-For-Shopping-/25-03- 2018-144344/

- Park, C. H., & Kim, Y. G. (2003). Identifying key factors affecting consumer purchase behavior in an online shopping context. International Journal of Retail & Distribution Management, 31(1), 16-29.

- Park, J. H., &Stoel, L. (2002). Apparel shopping on the Internet: Information availability on US apparel merchant Web sites. Journal of Fashion Marketing and Management, 6(2), 158-176.

- Passyn, K. A., Diriker, M., & Settle, R. B. (2011). Images of online versus store shopping: have the attitudes of men and women, young and old really changed?. Journal of Business & Economics Research, 9(1).

- Reddy, R. J. (2018). Online shopping-Its growth and status in India. International Journal of Engineering and Management Research (IJEMR), 8(3), 28-36.

- Santiworarak, L., &Choochaiwattana, W. A (2018)Case Study of Usability Design Principle in Responsivness e-Commerce Web Application, International Journal of e-Education, e-Business, e- Management and e-Learning, 8(3), 139-144.

- Sareen, M., & Jain, A. (2014). The Role of Social Influence and consumer's effort expectancy on online shopping: An empirical study of India. International Journal of Management Research and businessstrategy, 3(1), 138-158.

- Sarv, Daman Vij (2009). Survival of the Fittest-Market Competitiveness. Retrieved on 2nd November 2019 from https://www.fibre2fashion.com/industry-article/4017/survival-of-the-fittest-marketcompetitiveness

- Thamizhvanan, A., & Xavier, M. J. (2013). Determinants of customers' online purchase intention: an empirical study in India. Journal of Indian Business Research, 5(1), 17-32.

- Zee-Sun, Y., & Good, L. K. (2007). Developing customer loyalty from e-tail store image attributes. Journal of Service Theory and Practice, 17(1), 4-22.

- Zheng, X., Lee, M., & Cheung, C. M. (2017). Examining e-loyalty towards online shopping platforms: The role of coupon proneness and value consciousness. Internet Research, 27(3), 709-726.

- Ling, K. C., Chai, L. T., &Piew, T. H. (2010). The effects of shopping orientations, online trust and prior online purchase experience toward customers' online purchase intention. International business research, 3(3), 63.

- Khan, S. A., Liang, Y., & Shahzad, S. (2015). An empirical study of perceived factors affecting customer satisfaction to re-purchase intention in online stores in China. Journal of Service Science and Management, 8(03), 291.

- Putro, H. B., & Haryanto, B. (2015). Factors affecting purchase intention of online shopping in Zalora Indonesia. Journal of Economics, Management and Trade, 1-12.

- Pardeshi, V. H., & Khanna, V. (2020). FACTORS INFLUENCING WOMEN'S PERCEPTION OF WEBSITE ATTRIBUTES AND PURCHASE INTENTIONS. Academy of Marketing Studies

- Journal, 24(4), 1-10. Pardeshi, V. H., & Khanna, V. (2021). Factors influencing online apparel shopping orientation among women in Mumbai. Journal of Global Entrepreneurship Research, 1-12.

- Lin, G. T., & Sun, C. C. (2009). Factors influencing satisfaction and loyalty in online shopping: an integrated model. Online information review.

- Chincholkar, S., &Sonwaney, V. (2017). Website attributes and its impact on online consumer buying behaviour: An empirical study of online consumers in Mumbai region. Indian Journal of Science and Technology, 10(47), 1-9.

- Jun, M., Yang, Z., & Kim, D. (2004). Customers' perceptions of online retailing service quality and their satisfaction. International Journal of Quality and Reliability Management, 21(8), 817-840.

- Ha, S., &Stoel, L. (2012). Online apparel retailing: roles of e-shopping quality and experiential eshopping motives. Journal of Service Management, 23(2), 197.

- Kim, J. H., & Lennon, S. J. (2010). Information available on a web site: effects on consumers' shopping outcomes. Journal of Fashion Marketing and Management, 14(2), 247-262.

- Yang, K., & Young, A. P. (2009). The effects of customized site features on internet apparel shopping. Journal of Fashion Marketing and Management, 13(1), 128.

- Lee, Z. C. R., & Paul, D. (2012). Customer Perceptions of E-Service Quality in Online Apparel Shopping. ISSN 1931-0285 CD ISSN 1941-9589 ONLINE, 629.

- Feinberg, R., & Kadam, R. E-CRM Web service attributes as determinants of customer satisfaction with retail Web sites. International Journal, 13(5), 432.

- Bhaduri, G., & Kim, J. (2018). Impact of Individual's Regulatory Focus on Value Perceptions of and Willingness to Invest towards Online Mass-Customized Fashion. Fashion, Industry and Education, 16(1), 1-18.

- Bhattacharya, C. B., & Sen, S. (2003). Consumer-Company Identification: A Framework for Understanding Consumers' Relationships with. Journal of Marketing, 67, 76-88.

- Zhang, X., Prybutok, V. R., &Strutton, D. (2007). Modeling influences on impulse purchasing behaviors during online marketing transactions. Journal of Marketing Theory and Practice, 15(1), 79-89.

- Bhatti, A., Rehman, S. U., Kamal, A. Z., &Akram, H. (2021). Factors Effecting Online Shopping Behaviour with Trust as Moderation. JurnalPengurusan (UKM Journal of Management), 60.

- Kim, M. J., & Park, J. (2005). A consumer shopping channel extension model: attitude shift toward the online store. Journal of Fashion Marketing and Management, 9(1), 106.

- Szymanski, D. M., &Hise, R. T. (2000). e-Satisfaction: An initial examination. Journal of Retailing, 76(3), 309-309.

JIM QUEST

Journal of Management and Technology

UGC Care Approved Journal

SUBSCRIPTION FORM

Please accept the enclosed cheque/demand draft No_____dated_____drawn on_____bank favouring Jaipuria Institute of Management Ghaziabad for (Rs._____/ US $_____) towards subscription of JIM QUEST for one/two/three years (Please Tick).

Name:_____

Organisation:_____

Mailing Address:_____

_____

_____

City_____Pin/Zip_____Country _____

E-mail:_____

SUBSCRIPTION RATE

One Year
Print   Institutions: Rs. 1000/-   Individuals: Rs. 750/-   Overseas: 150 USD

Two Year
Print   Institutions: Rs. 1800/-   Individuals: Rs. 1300/-   Overseas: 200 USD

Three Year
Print   Institutions: Rs. 2600/-   Individuals: Rs. 2000/-   Overseas: 250 USD

Mail to:
Chief Editor
JIM QUEST
Jaipuria Institute of Management
Block A, Gate No 2, Shaktikhand IV,
Indirapuram, Ghaziabad
Ph: 0120-4550100, 9958077088
e-mail: jimquest@jaipuria.edu.in
       ashwanivarshney@gmail.com
Website: www.jaipuria.edu.in/jim

Please Note:-
1. The subscription will be from January to December, i.e. for complete set of volumes for one year.
2. Please send Rs. 50 extra for outstation cheque.
3. Any change in address should be informed immediately.
4. The subscription should be sent on the given address.

VISION

To become a Fully Integrated, Socially Responsible, Contextually relevant, and Value-Based Management Institute of National Reckoning by meeting the growing and emerging needs of industry and business through contemporary innovative management Teaching, Training, Research and Consulting.

MISSION

We intend to provide and develop the capabilities of the young managers by raising their level of competence and intellect to face various challenges in the global environment. In pursuit of excellence, we provide training and development services, foster research and disseminate knowledge through publication of books, journals and magazines for the development of society at large.

QUALITY POLICY

We, at Jaipuria Institute of Management, Ghaziabad dedicate ourselves to providing High Quality education in Management and Software and to promote Indian values, positive attitude & Team Spirit amongst all students, faculty and staff members.

We shall harness latest technological advances & conduct relevant Research & Consultancy to enrich Our education base which will enable participants in solving real life problems scientifically.

We shall strive for continual improvements in all spheres of our activities and maintain Quality Management System within the framework of ISO 9001:2008.

Jaipuria Institute of Management:

Jaipuria Institute of Management was set up by Seth Anandram Jaipuria Education Society in 2001. It has sprawling campus within Delhi-NCR. During this short span of 21 years , JIM has been acclaimed as a leading business school in Northern India. Jaipuria Institute of Management, Ghaziabad, was established by fulfilling all the norms regarding academic, financial and social aspects set by concerned statutory bodies.

The Institute offers full time 2 years MBA & MBA (Business Analytics) programme. Both the programmes are duly approved by AICTE, Ministry of HRD (Govt. of India) and affiliated to Dr. APJ Abdul Kalam University, Lucknow (U.P.). Moreover, Seth Anandram Jaipuria Trust and Seth Anandram Jaipuria Education Society run various reputed schools and colleges in the country. Jaipuria Institute of Management, Indirapuram, Ghaziabad, aims to provide quality management education to transform individuals into Business Leaders, Skilled Managers & Entrepreneurs.

Jaipuria Institute of Management intends to provide and develop the capabilities of the young managers by raising their level of competence and intellect to face various challenges in the global environment. In pursuit of excellence, the institute provides training and development programme, foster research and disseminates knowledge through publication of books, journals and magazines for the development of society at large. Jaipuria Institute of Management has established itself as a leading management institute in the Northern India.

I'M Advtg.9312431409