Volume 4 • Issue 1
January 2026

IMI
BHUBANESWAR

jim.imibh.edu.in
e-ISSN: 2583-8326

IMIB Journal of Innovation and Management

e-ISSN: 2583-8326

IMIB Journal of Innovation and Management is published biannually in January and July by IMI Bhubaneswar.

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Printed and published by Dr Malaya Malla, Head-Administration, IMI Bhubaneswar, on behalf of IMI Bhubaneswar, IDCO Plot No. 1, Gothapatna, PO: Malipada, Dist.: Khurda, Bhubaneswar 751003, India. Printed at Sai Printo Pack Pvt Ltd, A 102/4 Phase II, Okhla Industrial Area, New Delhi, Delhi 110020.

Editor: Sangram Keshari Jena

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IMIB Journal of Innovation and Management

Volume 4 Issue 1 January 2026

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Original Articles

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Original Article

Poor Performance Management or Management Trick

IMIB Journal of Innovation and Management
4(1) 7–14, 2026

DOI: 10.1177/ijim.25133550l
jim.imibh.edu.in

Geeta Rana[1] and Ravindra Sharma[1]

Abstract

This article follows events faced by Nisha Verma, a talented employee at Lotus Beauty Care Pvt Ltd, Haridwar. While Nisha's consistently good performance was acknowledged by even her superiors, she was shocked to receive a poor performance appraisal in 2018. While she tried to talk to her superiors to know the reason for such a poor appraisal, she got no clear answer. This case study examines the event and seeks to determine whether: (a) Nisha really received the appraisal she deserved?, (b) it was a case of poor employee performance management on the part of Lotus? or (c) it was a deliberate ploy by Lotus to oust Nisha so that they could hire someone else for a lower salary?
This article aims to:

1. Analyse the performance appraisal method used to assess the performance of Nisha Verma.
2. Examine the basis on which Nisha Verma was given a poor performance appraisal.
3. Analyse Nisha's performance appraisal and the events that followed
4. Debate whether the issue was just a case of wrongly (or otherwise) performed performance appraisal, or a deliberate attempt by Lotus to oust Nisha in order to hire someone else at a lower salary.

Keywords

Performance management, talent retention, attrition, grading, key performance indicators

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Introduction

Organisations invest a considerable amount of time in performance management systems, which in simple terms involve setting of goals aligned to business priorities and evaluation of employees against set priorities for taking various decisions with people-related implications. Companies are radically rethinking the way they measure, evaluate and recognise employee performance. Indeed, performance appraisal is one of the key features that determine an organisation's success. On the other hand, it helps organisations assess their productivity and reevaluate the means to improve. This case study explores performance appraisal issues faced by Nisha Verma, a talented employee at Lotus, a beauty and personal care product-manufacturing company in Haridwar, India. The study analyses Nisha's performance appraisal process and its consequences; it examines the event and seeks to determine whether Nisha really received the appraisal she deserved, whether Lotus poorly managed Nisha's performance appraisal or whether it was a deliberate ploy by Lotus to oust Nisha so that they could hire someone else at a lower salary?

Research Methodology

The present study used the participatory research method, which involved personal interaction with respondents engaged in various activities such as sales, HR, finance, operations, etc. Data were collected through structured personal interviews. The participatory technique is considered to be the most appropriate for in-depth learning and understanding of organisational transformation processes. Furthermore, the participatory method enables researchers and respondents to interact in person, which allows for a certain degree of openness that otherwise would not be possible. Such personal interactions give researchers the opportunity to ask questions and exchange information and ideas that may not necessarily be a part of the structured survey instrument. The process may also bring to light issues that were earlier not thought of or reveal facts that were previously not known.

Performance Management: Overview

It is commonly acknowledged that in this day and age, successful organisations seek to attract and retain the best talent to survive extreme competition and gain a competitive advantage over competitors. Thus, performance management systems (PMS) have gained much significance. For best results, firms look to align PMS with organisational systems, objectives and goals. PMS is thus seen as a powerful strategic tool to keep hard-working and committed employees motivated and satisfied, and achieve critical organisational goals (Jain & Gautam, 2014).

Historically, performance management was restricted to fixing employee wages or salaries and shaping employee behaviour to achieve specific outcomes. With time, this approach seemed inappropriate and inadequate for most firms and institutions. Advancements in technology also forced changes to traditional approaches as organisations had to become more knowledge-intensive to adopt

technology-driven manufacturing processes (Helm et al., 2007). Gradually, the focus and scope of PMS expanded to encouraging learning and developing conducive work environments. In recent years, PMS has evolved into a more formal, comprehensive and specialisation-oriented domain.

Simons (2000) emphasised that an effective PMS could not be designed and executed without taking human behaviour into consideration. Holloway et al. (1995) also highlighted the importance of understanding behavioural factors of performance management. Roberts (2003) suggested the following steps in performance management: establishing organisational and individual objectives; setting up reward systems; establishing training and development schemes; providing feedback; individual career planning; evaluating existing PMS; and intervention and culture management. Armstrong and Baron (2004) saw performance management as a tool to make sure that managers managed effectively. This implied that workers knew what was expected of them and possessed adequate skills to meet expectations, had organisational support and were given performance-related feedback, and could converse and contribute to individual and team objectives. According to Watkins (2007), performance management was vital to public as well as private enterprises. Helm et al. (2007) were of the view that PMS was essential to developing a performance-orientated culture; it aligned employee performance and firm objectives. It also strengthened the pay–performance link. Bhattacharjee and Sengupta (2011) stressed that employees were the most valuable organisational assets and that if a firm wished to grow, it was important to manage these assets.

The commonly used PMS approaches to assess employee performance include:

General Evaluation

This involves consistent communication between employee and manager. This type of assessment is performed throughout the year and is more informal and verbal in nature. This way, goals are set, feedback provided and new targets established.

Performance Ranking

This approach involves assessing and ranking employees on the basis of their performance. Generally, the best performer is ranked the highest.

Grading

Under this method, employees are graded, say 'A' to 'F' (high to low), on the basis of their work in several work-related areas (Clausen, 2008).

Goal Tracking

This system assesses employees by project. In other words, an employee is assessed on the basis of how they performed on a project. The advantage of this

system is that goals are set for the whole organisation, departments and individuals. This way, each department and individual has their responsibility chalked out, which is in line with the overall organisational goal, making the evaluation more objective and effective (Drucker, 1954; Rana, 2014).

360-degree Evaluation

This involves getting evaluated by almost all stakeholders involved. Thus, an individual may be evaluated by customers, subordinates, superiors and peers. As multiple sources give feedback, this system of evaluation may prove to be quite effective (Wadhwa & Wadhwa, 2011).

Competency-based Evaluation

This approach emphasises employee skill and knowledge. Competency-based evaluation tests how well an employee can carry out one task or several tasks using their skills and knowledge. It may be said that employees are evaluated on the basis of their competency in an on-the-job setting (Campion et al., 2011).

Behaviour Evaluation

This method takes into account employee behaviour; a set of behaviours is used to assess employees. On the basis of data and employee-specific information, behavioural charts may be created to assess patterns of employee behaviour.

Case

Nisha completed her post-graduation in arts from Noida University and got a job in a middle-scale cosmetic firm at Noida as a marketing executive in 2009. Her job was mainly to promote the brand of the cosmetic company and secure better revenues year-on-year. Over time, she gained the reputation of being a 'seasoned' marketing professional. With an experience of over five years, Nisha was approached by Lotus Beauty Care Pvt Ltd, a beauty and personal care product manufacturer in Haridwar, and was offered the position of senior executive marketing. Established in 2004, Lotus Beauty Care Pvt Ltd made a name for itself in the list of top suppliers in India. The company is located in Haridwar, Uttarakhand; it is a subsidiary unit of Clarion Cosmetics and has been established by professionals with expertise in the manufacturing of cosmetics and personal care products such as lipstick, face cream, face wash and nail paint.

The cosmetics and personal care industry can be divided into many smaller segments. These include make-up, skin care, hair products, fragrances and toiletries. Combined, the segments form an industry that continues to grow and does

not show any signs of slowing down. Nevertheless, major changes did impact the industry, and Lotus could not remain untouched. Some major changes in recent years that impacted Lotus include the following:

1. Customers started prioritising skin care first and seeking more nature-based products. Minimalistic skin care brands with vegan, cruelty-free ingredients began fuelling the billion-dollar natural beauty movement as more consumers started questioning what exactly was in their make-up. Consumers came to become more concerned about health, wellness and issues such as natural resource depletion and environmental degradation; thus, the environmental performance of products and processes became a key consideration. Because of these reasons, major cosmetic companies, including Lotus have experienced sales slumps in recent years.
2. Lotus felt the shock of demonetisation in 2016 and the introduction of the new goods and services tax (GST).
3. Increasing competition with international and domestic players impacted the firm significantly. More importantly, Lotus did not develop its own stores. On the other hand, international brands such as L'Oreal, Sugar, EirNYC, SiO Beauty, Vendome Beaute France, etc. consistently consolidated their presence in the Indian market. The aforementioned negatively impacted revenues of Lotus.

However, through hard work and determination, Lotus improved its market position and revenues, and Nisha played a key role therein. In June 2017, Mr Kuldeep Arora, marketing head, Lotus Beauty Care Pvt Ltd, complimented Nisha for her achievements at an official party. He said that under the leadership of Nisha, the company was doing much better than the previous year; her capabilities to strategise and quickly implement had made this possible. The company rigorously followed key performance indicators (KPIs)—a quantifiable metric that reflects how well employees are achieving their stated goals and objectives. However, due to difficult times, the company had communicated to all employees that increments would be minimal. Nisha was consistent in her performance, and her performance rating was 3.9 out of 5 during 2015–2016, 4.1 for 2016–2017 and 4.4 for half a year in October 2018. These scores were based on individual KPIs aligned with KRAs. Transparency and integrity were vital to accounts and operations teams of the cosmetics company.

According to a marketing head in the company, Nisha was resourceful and capable; she was able to develop and oversee several aspects of a marketing campaign and manage product lines throughout their entire lifespans. She was equally good at market research and data analysis. Nisha was considered accessible, affable, a problem solver and a true asset to the company. No wonder, she always had the support of her seniors. However, things were about to change during the fall of 2018 when Nisha was jolted by a performance appraisal letter mentioning her a 'C' performer, which resulted in a meagre salary increment for the year.

Nisha contacted Mr Kuldeep to ask about the poor ratings assigned to her. She told him that a performance rating above 4.0 did not mean 'no increment' and asked why the appraisal team gave her a 'C' rating. Mr Kuldeep and the HR

team gave a clear explanation that the rating was assigned and the decision taken by the company sales team head Mr Saurabh. However, both Mr Kuldeep and Mr Saurabh looked into the matter and sent Nisha a revised recommendation, 'B+'. Nisha then asked Mr Kuldeep why she was not given an 'A' rating. He admitted that there had been several discrepancies in Nisha's appraisal process. Nisha told Mr Kuldeep that she had always given her best to work and achieved set targets and could not understand where her fault lay. He told Nisha that according to her HR record, there was some negative feedback from her team; she was absent at an important corporate meeting held last month, when she was expected to be present as a leader. Negative feedback also related to relations with peers and cooperativeness in team. Some colleagues also, at times, had a negative opinion of her. When Nisha asked for specific events and reasons behind her poor rating, Mr Kuldeep said it was against the company policy to disclose those details.

The Aftermath

To Nisha, the low rating seemed unjust. Despite having high numerical values (which implies she put in a lot of hard work), she received a poor rating, which led to job dissatisfaction and broke her commitment to the company. As she was given no specific reason or facts to justify the rating given to her, she decided to leave the job. Nisha began looking for a new job and soon got one in a multinational company at a senior position with a higher salary.

Discussion

The problem faced by Nisha while at Lotus is a common one. The case highlights several issues at the workplace closely related to employee engagement, morale, attrition, management attitude, employee–superior relationship and employee performance management. There are several issues that arise upon close examination of Nisha's case. The case establishes that Nisha was a talented, hard-working and result-delivering employee. She was appreciated and recognised by her superiors for her work and professionalism. She had been receiving good appraisals in the past. Then, suddenly, she received a poor rating in 2018. Nisha tried to seek reasons for the poor performance review but did not get clear answers except a few unconvincing reasons like not showing up for a meeting or her colleagues having a negative opinion of her. Another important observation is that her appraisal was later revised to 'B+' from 'C'. If Nisha had really performed poorly, then why the revision? This might be an indication that the poor review Nisha was given earlier was not entirely sincere; it was either a wrong review (even if not deliberate) or a purposeful act. On the basis of the information in the case, it may be said that Nisha did not deserve the poor appraisal she received. This is corroborated by the fact that her appraisal was revised. So, was it a case of poor employee performance management on the part of Lotus? This may seem likely, even if it were a one-off event as the previous appraisals Nisha received in the same company were

good. However, it is to be questioned how could this one evaluation go so wrong? Were the data not in place? Another question is, how could colleagues' opinion with respect to Nisha suddenly turn negative when she had been so widely appreciated in the past? Also, why was Nisha not given specific reasons for the poor evaluation (she was told it was against the company policy to do so)? These questions seem to refute the notion that it was a one-off incident of a performance appraisal having gone inadvertently wrong. This brings us to a third possibility—was it a deliberate ploy by Lotus to oust Nisha so that they could hire someone else for a lower salary?

While it would make sense to assume that Lotus would want to retain good talent, the case forces us to consider otherwise. Ideally, the performance appraisal process at Lotus should have given clear reasons for the poor assessment Nisha received. Doing so would also have provided for a transparent system of work, which, in turn, would reinforce employee trust in the organisation, ensure loyalty and avoid attrition. But from the case, it is apparent that the company did not show any serious intention as such. Could it mean that the company itself was not eager to retain Nisha? This way, the company could get a chance to hire new employees at a lower salary. Of course, this gives birth to another question—would the new hire be at least as good as, if not better than, Nisha? Or was the company management of the view that the job profile did not require exceptional talent? Again, what caused this shift in management thought? Also, the company had communicated to its employees (including Nisha) not to expect significant increments that year; if so, Nisha would have been prepared as such. Then why the poor appraisal? Why did not the company show eagerness to retain Nisha? Nisha clearly wanted to understand where exactly her fault lay to get the 'C' grading; she was not given any reason; add to it the fact that Mr Kuldeep himself had admitted that there had been discrepancies in her appraisal process. Nisha was probably more hurt by the way things were handled than the financial aspects (small increment) of the appraisal. She had always been a good employee and gave results. Telling her that she had not performed well and not giving her specific parameters on the basis of which this decision was made certainly struck her self-esteem. Ultimately, Lotus lost a good employee; it could be argued whether it was due to poor performance management or was done willingly.

Questions for Students

1. Analyse the performance appraisal method used to assess the performance of Nisha Verma.
2. Examine the basis on which Nisha Verma was given a poor performance appraisal.
3. Analyse Nisha's performance appraisal and the events that followed.
4. Debate whether the issue was just a case of wrongly (or otherwise) performed performance appraisal or a deliberate attempt by Lotus to oust Nisha in order to hire someone else at a lower salary.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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Original Article

iGen Making its Way Towards the Workspaces—A Systematic Literature Review

IMIB Journal of Innovation and Management
4(1) 15–31, 2026

DOI: 10.1177/ijim.24128311O
jim.imibh.edu.in

Sonali Jain[1]

Abstract

The organisations in the corporate world are bound to face numerous challenges on regular basis. Various generations are working in the organisations at the same time and this generational diversity poses an avoidable challenge for the organisations irrespective of the nature of the industry and location.

Purpose: The author aims to answer the following questions in the article: (a) whether iGen is significantly diverse from the other previous generational cohorts, (b) to determine the themes and contexts in which generational diversity and iGen have been studied, (c) to identify the gaps in the existing literature regarding the study of generational diversity and iGen and (d) to determine the future scope for the researchers to study regarding generational diversity and iGen.

Methodology: Scopus database has been used in this study and 60 articles have been picked out from the database of 791 articles for the review. TCCM framework has been utilised for this study.

Keywords

iGen, generational diversity, TCCM, Gen Z

Introduction

Organisations in the current era consist of various generational cohorts positioned on a variety of job roles. At present, majority of the job positions are found to be

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taken by the employees belonging to the two generations, that is, Generation X and Millennials. These two generations have been profoundly studied by many researchers.

Generation X was named by a novelist Doug Coupland (Howe & Strauss, 1992). The individuals whose birth year lies between 1963 and 1981 are considered to be a part of Generation X (Fry, 2018). Generation Y or Millennials comprise the individuals whose birth years lies between 1981 and 1995 (Gabrielova & Buchko, 2021; Akçay, 2022). The upcoming generation, Generation Z or iGen, is the population whose birth year lies between 1995 and 2012 (Pichler et al., 2021).

Gen X and Gen Y have already been studied profoundly (Gabrielova & Buchko, 2021), while the literature is scarce about iGen. Neil Howe and William Strauss (1992) explained in their generational theory that individuals who took their birth in a particular time frame are considered to belong to the same generation. Individuals of a generation are found to have some similarities between themselves. However, their values and characteristics are different from other generations due to their differing experiences and exposures (Verlinden, n.d.). Generational diversity refers to the diversity that originates from the fact that many generations work simultaneously in an organisation. This article aims to study the generational diversity by reviewing the existing literature.

Contextual Background

Generations

A well-known sociologist named Karl Mannheim is credited for proposing the term ‘Generation’. He recommended that generation is a bunch of individuals whose birth year lies in a range and who have shared and encountered similar situations and circumstances (Mannheim, 1993). On the basis of generational theory, researchers have stated that individuals have been grouped and classified as belonging to the same generation, if they have encountered similar experiences and events in the initial years after their birth and during the developmental stages of their lives (Jung et al., 2021; Ryder, 1965). Researchers emphasised that the labels of generation can be viewed as a component of individual’s identity. The term ‘Cohort’ describes the generational group that shares the birth year and has faced identical historic events (Joshi et al., 2010; Smola & Sutton, 2002).

iGen

Individuals who belong to the generational cohort of iGen are found to be born between 1995 and 2010. Occasionally, this generation is labelled by a number of titles, that is, Gen Z, ‘Me’, Generation and Digital Natives (Francis & Hoefel, 2018; Pichler et al., 2021).

Several features of iGen are emphasised in the literature. Such characteristics suggest that iGen is a generation that grew up in an era where technology and the internet were commonplaces and easily available. Their entire lives they have been using technology for a variety of activities, including everyday tasks, communication and enjoyment. They frequently use internet-based educational tools for improving their skills. This encourages the development of individualistic work-related behavioural preferences and it contributes in their inclination towards more individualistic approach over social approach of working. They encounter difficulties when collaborating in groups within the companies (Pichler et al., 2021). This generation places a strong emphasis on accomplishments. iGen seems to be more accepting of diversity and inclusion than previous generations. However, there is an increased possibility that they may experience mental health issues (Pichler et al., 2021; Schroth, 2019). Researchers have found and stated that iGen has the need to feel appreciated and encouraged by organisations (Pichler et al., 2021). According to research, iGen is more likely to use organic items than plastic ones. Since they do not hurt the environment (Dangelico et al., 2010; Jain et al., 2006), their green consumption, behaviour and values are positively impacted by their awareness of issues, concern for the environment and green knowledge (Nguyen et al., 2022). iGen has the need to feel worthy for the organisations to motivate themselves to broaden their knowledge and skill inventory (Pichler et al., 2021).

Many researchers have noted that the primary source of puzzlement exists in the birth year when it comes to assigning labels of the generational cohort (Prund, 2021). It is demonstrated in Table 1 how various authors employed varying years while labelling the generations.

Generational Diversity

Generational diversity refers to the diversity based on the birth-year identifiable groups that is termed as generations in the organisations. It is those rare times in the history that the workspaces have a rising mix of independent generational groups working simultaneously in the organisations (Ballone, 2007; Haynes, 2011).

According to generational theory, each generation has distinctive expectations, experiences and history that reflect generations' lifestyles and attitudes (Strauss &

Table 1. Generation Labels and Birth Year Range Utilised by Distinct Researchers.

Source/ Generation	Baby Boomers	Generation X	Generation Y/ Millennials	iGen
De Toro et al. (2019)	1955–1969	1970–1981	1982–1992	1992–onwards
Gabrielova and Buchko (2021)	1946–1963	1963–1981	1981–1996	1996–onwards
Ganguli et al. (2022)	1945–1965	1965–1979	1980–1995	1995–onwards

Howe, 1991). Each generation bring their own unique flavour and bunch of characteristics and values into the organisation (Gabrielova & Buchko, 2021).

At present, one of the crucial challenges faced by the organisations and the workplaces is generational diversity (Prund, 2021). However, diversity in terms of generations is essential for the organisations to face highly competitive, dynamic and ambiguous scenarios in the marketplace and the industry (Amayah & Gedro, 2014).

Age diverseness is said to impact various organisational HR procedures including management of disputes, personnel training, development of the career paths and workforce retention, channels of knowledge sharing and remuneration policies (Williams, 2016). iGen behaves, feels and functions differently from the previous generations (Francis & Hoefel, 2018).

Methodology

This study aimed to explore the concept of generational diversity in the workplace keeping iGen under the lens. In order to study the existing themes and to determine the unexplored areas, it was recommended to conduct a systematic literature review (SLR) and theory, context, characteristics and methodology (TCCM) framework has been selected. It has been highlighted that the change in context brings the change in other aspects of the similar research topic, especially related to human resource (Zehetner et al., 2022) which makes TCCM even more efficient for an SLR study. The database selected for this study was Scopus, since it sizably covers the publications across a variety of disciplines.

Stage 1: Acquisition

The acquisition process initiated with using the Google Scholar in order to obtain a good keyword combination. ‘Generation Z’ and ‘Generational Diversity’ were typed one after the other to explore the other keywords which are widely used interchangeably for these words. The search string used in the search of documents on the Scopus has been mentioned in Table 2 (Eldridge, 2023; Woodward et al., 2015). The search produced 791 articles.

Table 2. Search String.

Database	Search String Keywords
Scopus	‘Generational Diversity’ OR ‘Intergenerational differences’ OR ‘Generational Differences’ OR ‘Intergenerational Diversity’ OR ‘Generation in the workplace’ OR ‘Gen Z’ OR ‘GENERATION Z’ OR ‘iGen’ OR ‘Homelanders’ OR ‘Digital Natives’ OR ‘Gen Zers’ OR ‘Zoomers’ OR ‘iGeneration’ OR ‘centennials’ OR ‘post-millennials’ AND ‘Diversity’ OR ‘Inclusion’ OR ‘Equity’

Stage 2: Selection of the Articles

The inclusion and exclusion criteria for the selection of the articles included document type and language. The details about the inclusion and exclusion criteria have also been given in Table 3. To keep the scope of this study wide we have not put any constraints on the years of the published articles. We came down to 215 articles after the selection of the articles stage.

Stage 3: Purification and Screening

In this stage of purification and screening, the articles are extracted on the basis of relevance for the study. The articles were screened in detail and selected the ones which are relevant considering the objectives of this research study. After the extraction of the outliers, 59 articles which were found to be relevant.

Discussion

This study focussed on 59 articles for the analysis purpose using TCCM framework. The descriptive analysis followed by the TCCM framework analysis has been discussed. The description for the inclusion and exclusion criteria of the research article is given in Table 3. The articles were selected on the basis of the language, type of document, publishing stage and suitability.

On the Basis of Time

The descriptive analysis shows us that the trend of research on the topics related to iGen and generational diversity has been increasing exponentially with time. The published articles range from 2014 to 2023 (till the month of July). The number of articles has been increasing to highest, that is, 11 articles in 2022 which can be seen clearly in Figure 1.

On the Basis of Place

Our study shows that a large number of articles have not mentioned the country which was focussed in their study. However, the United States of America turned out to be the country where many researches focussing on either generational diversity or iGen or both have been conducted (n = 7). The detailed description about the studies taking place in numerous countries has been given in Figure 2.

On the Basis of the Industry

Our study indicates that a large number of studies were conducted in education sector or industry (n = 17). Following the trend and to ensure that the studies can be generalised, researchers have conducted their research considering multiple

Table 3. Inclusion and Exclusion Criteria.

Specification	Inclusion	Reason	Exclusion	Reason
Semantic	English	It is considered as universally accepted language and majority of journals favour it	Other languages	The translation accuracy can be weak and translating the exact meaning can be a tough and laborious
Time	All included	To study the trend of the importance of the subject over the years	None	–
Document type	Article	To thoroughly cover the topic and subject area	Book, book series and conference proceedings	Book and book series do not proceed via anonymous peer review which makes them less reliable. Conference proceedings will submit to a journal for publishing
Publishing stage	Final	It ensures reliability of the documents	Article in press	They may undergo more changes which may have significant impact on their results
Access	All open access	To ensure all the articles are included which exists on Scopus	None	–
Suitableness	Articles which cover generational diversity and Gen Z (iGen)	To ensure the relevant articles are included to achieve research objective	Articles which are completely unrelated to this study	Articles which do not emphasise iGen and generational diversity. The articles which are not related to the study

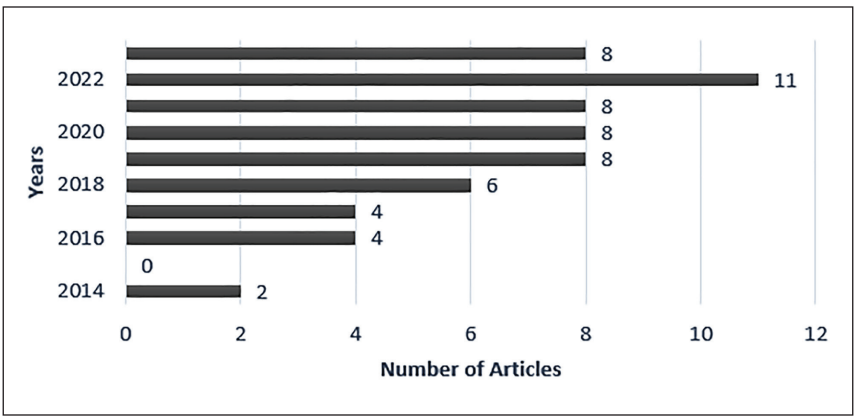

Figure 1. Year-wise publications.

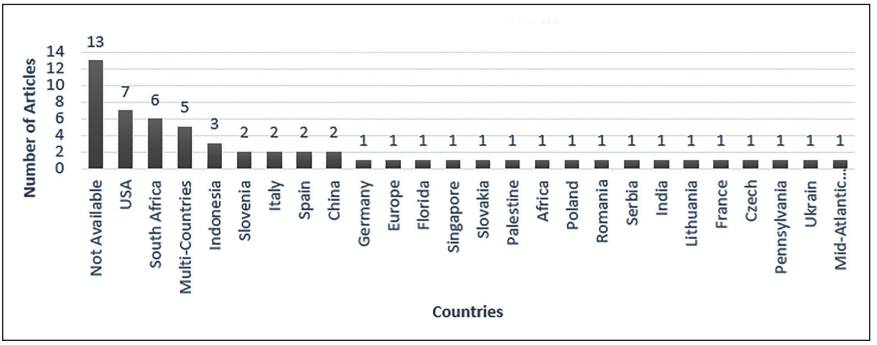

Figure 2. Country-wise publications.

industries (n = 13). The details about the studies conducted in various industries over time have been depicted in Figure 3.

Analysis on the basis of TCCM Framework

TCCM categorises the research arena into four dimensions: theory, context, characteristic and methodology (Chauhan et al., 2021; Paul & Rosado-Serrano, 2019). This section highlights the theme which had been used to explore about the topic. It also showcases mainly in which context this topic has been studied, the characteristics such as the variables used and methodology adopted by researchers to achieve the objectives. This section also consists of the dimensions for the future research which will contribute in expanding the boundaries of the literature of the topic.

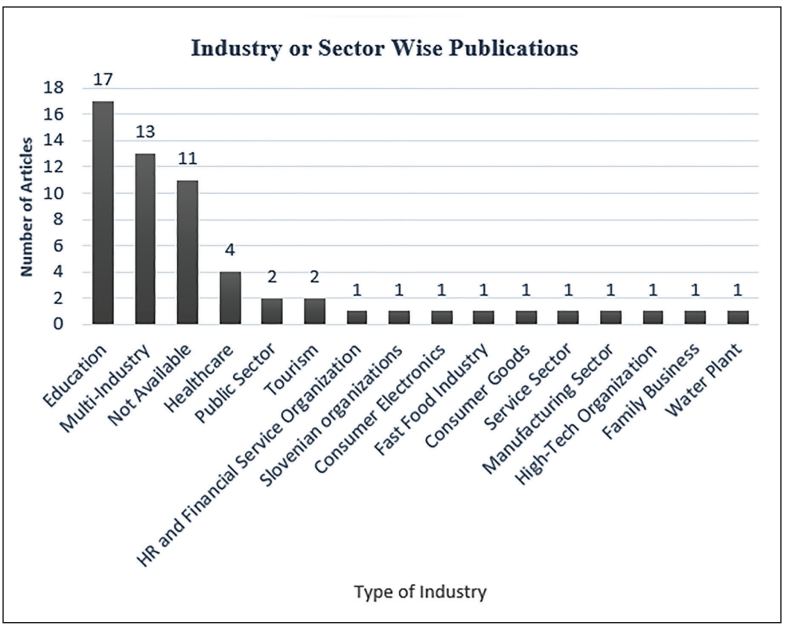

Figure 3. On the basis if industry: Industry or Sector-wise publications.

Theories

Theory is the first aspect which is studied while following the TCCM framework. It was discovered that various theories have been considered by the researchers depending upon the scope and context of the research study. However, theory of generations is anchored in the majority of the articles. Other theoretical arenas adopted by the researchers are social exchange theory, theory of plant behaviour and self-determination theory. The details about the theories that have been used in the various articles have been showcased in the supplementary material.

Theory of Generations.

The seminal work conducted by Mannheim (1952) indicates that generations are categorised on the basis of the common time of birth. Generational cohort theory also describes that the generations who are exposed to identical events and experiences will have identical set of characteristics and behavioural patterns (Inglehart, 1997).

Context

The sample of this research study indicates that the research was conducted in the developing countries and the developed countries regarding generational diversity, iGen or both. The research on these topics was were majorly conducted in the European continent (n = 17). However, on the country level, majority of the

research studies were conducted focussing the population of USA (n = 7). Researchers have also focussed in conducting studies in the multi-countries (i.e. 5%) with the aim of generalising the results. The geographical context found to be missing from a significant number of studies (n = 13).

The results of this research study indicates that various industries and sectors have been focussed by the researchers like healthcare, public sector, manufacturing sector and family business. for conducting the research regarding the topic. It was found that education sector has been focussed the most for conducting the research (n = 17). About 22% of the sample studies have been conducted keeping multiple industries and sectors as the centre of attention.

The following themes were reflected in the research articles: intergenerational difference, generational diversity, sustainable human resource management, financial behaviour and tourism. The details about the contextual factors that have been focussed in the various articles has been showcased in the supplementary material.

Characteristics

Antecedent

The sample has been analysed and some of the recurring antecedents which were independent in nature came out to be demographic characteristics like age (Kaminska & Borzillo, 2018; Williams, 2016), gender, education (Nnambooze & Parumasur, 2016), social media marketing activities (Ruangkanjanases et al., 2022) and intergenerational perspective (Abu Daqar et al., 2020). The details about other antecedents are given in the supplementary material. iGen values have not been considered as antecedents yet which may impact their behaviour and actions in the workspaces. It may be considered for the further research studies.

Consequence

Our analysis indicated that some of the recurring outcomes among the sample of this study are values, behaviour (Qi et al., 2021; Ruangkanjanases et al., 2022), job satisfaction (Bachus et al., 2022; Jelenko, 2020; Tan & Chin, 2023), diversity, individualism and technology (Pichler et al., 2021). However, there are some of the consequences like ethical behaviour (Klopotan et al., 2020) and financial behaviour (Abu Daqar et al., 2020). which are context and industry dependent. The details about the remaining dependent variables are given in the supplementary material. Some of the outcomes like attitudes are unexplored in the literature of iGen related generational diversity.

Mediating, Moderating and Control Variables

Mediating variables are responsible to describe the relationship between antecedents and consequences (Baron & Kenny, 1986). Some of the mediating variables utilised by the researchers are brand equity (Ruangkanjanases et al., 2022), perceived space, lived space (Kangwa et al., 2021), overconfidence (Tsai et al., 2018) and so on. The details of the remaining existing mediating variables are given in

the supplementary material. Demographic variables can be used to mediate the relationship between iGen characteristics and their impact in workspaces.

Moderating variables refer to the variables which dominates the direction and intensity of the relationship between antecedents and consequences (Baron & Kenny, 1986). Some of the moderating variables discussed are brand awareness (Ruangkanjanases et al., 2022), environmental factors (Urick et al., 2016) and self-efficacy of environmental protection (Zhao & An, 2023). The details are given in the supplementary material. Variables like demographic and behavioural have a scope to be studied as moderating variables.

The interconnection between generational diversity focussing iGen and the workspaces can be influenced by the control variables. Researchers highlighted some of the control variables like demographic factors such as age (Klopotan et al., 2020), gender (Figà-Talamanca et al., 2022; Qi et al., 2021; Rahadi et al., 2021), nationality and religion (Roman-Calderon et al., 2019; Tan & Chin, 2023). These factors may have a notable impact on shaping the value system, personality and behavioural patterns of iGen.

Methodology

The results reflect that majority of the studies were conducted with the quantitative approach (n = 29). Followed by the research studies which were conducted with the qualitative approach (n = 20). Some of the researchers also adopted mixed approach to enhance the accuracy level of the outcomes obtained.

Researchers utilised the primary or the secondary data sources or both to gather the data for their research study. Methods like survey, focus groups and systematic literature review were seen to be used by the researchers. Survey and interview methods were found to be most used methods during the data gathering process.

Probability and non-probability sampling techniques both were adopted by the researchers. The analysis indicates that the sampling techniques like purposive, snowball, nested sampling and stratified sampling were utilised in the sample articles. The details about the various sampling and research designs have been showcased in the supplementary material.

Conclusion

On the basis of the analysis, the conclusion can be made that there is still scope to study generational diversity by adding iGen to the mix of demographic population of the organisations. Studies on iGen and generational diversity exist in the literature but there is an evident gap in combining these two constructs and studying them in the organisational setting.

Implications

iGen is expected to enter the workspaces soon. Some of them have already joined the organisations and a majority of them will soon be a part of the organisations

(Pichler et al., 2021; Schroth, 2019). Generational diversity implies that all the generations are unique. Their exposure and their surrounding contribute towards their value system, priorities and their perception towards the organisations. It is essential for the organisations to understand this generation to fascinate, charm, satisfy and keep their iGen employees. Many researchers have been studying about generational cohorts from a long time. The generations are found to be similar in some aspects but unique in another. The various facets of previous generations have been studied in great detail (Gabrielova & Buchko, 2021). This article adds another generational cohort, that is, iGen to the mix in order to broaden the scope of generation-based studies. Studying this generational cohort is important because this generation will take a majority of positions in the workspaces soon (Francis & Hoefel, 2018; Gabrielova & Buchko, 2021). It is expected that they will impact the organisations and the world. It is important to study the iGen because the future of the society will be in the hands of this generation.

Limitations

While we tried making this review study meaningful and relevant for the researchers but it was not free from a few shortcomings: (a) only TCCM framework has been used for this SLR, (b) the database utilised in the acquisition stage was limited to Scopus, (c) limited and most occurred in articles keywords were used in the acquisition stage (Table 2), (d) the inclusion and exclusion criteria put constraints on the sample.

Future Scope

The study aimed at locating the research gaps and the scope for further research. Some of the limitations of this review study opened the paths for the future researchers. (a) Other methods like bibliometric analysis can be used to further identify the gaps which might have left due to the scope and limitations of TTCM. (b) Other databases like WOS and EBSCO can be used for the future research. (c) More keywords can be added to the keyword combination. (d) The inclusion and exclusion criteria pave the way for further research. They may have a substantial impact on the conclusion. (e) After a span of time, the need for a review study crops up due to the additional contribution of the researchers in the field.

Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The author received no financial support for the research, authorship and/or publication of this article.

Supplementary Material

Supplementary material for this article is available online.

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Original Article

Exploring the Enablers of Organisational Inclusion: An Interpretive Structural Modelling Approach

IMIB Journal of Innovation and Management
4(1) 32–48, 2026

DOI: 10.1177/ijim.241245850
jim.imibh.edu.in

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Abstract

This research paper aims to identify and structure the enablers that promote organisational inclusivity, fostering a workplace that values diversity and inclusion. Using Interpretive Structural Modelling (ISM), the study identifies the following four clusters of enablers: autonomous, linkage, dependent and driving. Furthermore, the research findings suggest that inclusive leadership acts as a key driving factor for promoting inclusivity in the organisation. The study offers practical implications for human resource managers to develop targeted strategies to create an inclusive culture and enhance overall organisational performance by recognising and prioritising the identified enablers.

Keywords

Organisational inclusion, Interpretive Structural Modelling (ISM), enablers, inclusive leadership

Introduction

Organisations are increasingly recognising the importance of diversity and inclusiveness in today's global business landscape. Inclusivity is not just a buzzword, but a strategic foundation for success in a dynamic and interconnected world. It fosters innovation, adaptability and competitive advantage in diverse markets (Brimhall et al., 2018). Embracing diversity is now a critical imperative for sustainable human resource management (Gehrels & Suleri, 2016). The

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recognition of the significant role played by an inclusive environment is underlined by its power to inculcate a sense of belonging, spark creativity, drive innovation and improve overall performance (Naseer et al., 2023; Nguyen et al., 2022; Sabharwal, 2014). Despite the growing recognition of organisational inclusivity, many organisations struggle to turn inclusive ideals into actionable practices that empower all employees (Theodorakopoulos & Budhwar, 2015). Achieving organisational inclusion goes beyond merely assembling a diverse workforce; it necessitates an ecosystem where every individual, regardless of their background or experiences, feels appreciated, respected and empowered to contribute to the organisation's vision and mission (Jain, 2020). It involves recognising and celebrating individual perspectives and combating biases. Many studies have shown that an inclusive workplace matters to the organisation's effectiveness (Brickson, 2000; Cox, 2001; Davidson, 1999). Thus, managers and leaders need to address the fundamental enablers of inclusion to unlock the potential of diversity. This will result in a series of research questions: (a) What are the important factors that drive a more inclusive environment in the organisation; (b) How do these identified enablers interrelate within the organisational context; (c) What components constitute a comprehensive structural model capturing different enablers responsible for organisational inclusivity; (d) How can the identified enablers be categorised as anonymous, linkages, dependent or independent?

Fostering a diverse and inclusive environment requires leadership commitment, staff development, inclusive policies and accountability measures (Jadaun, 2018). Simultaneously, factors like job match, policy adherence, accommodation and public support are also crucial (Johnsen et al., 2022). Leaders need empathy, patience and a non-judgemental attitude for effective inclusion (Johnsen et al., 2022). Further, diversity, equality and inclusion (DEI) practices, include training, diversity councils, varied hiring and mentorship programs (Nautiyal, 2018). In Indian SMEs, inclusive work culture is influenced by the work environment, institutional culture, employee involvement in decision-making and demographic background (Bhanu, 2022). This shows that while organisational inclusion and its enablers have been extensively studied, the intricate relationships between them remain unexplored. Existing studies focus on individual enablers, but this research uses Interpretive Structural Modelling (ISM) to create a structured framework that shows how enablers affect an inclusive workplace. A comprehensive literature review will identify organisational inclusion facilitators and examine their links using ISM. The research will also classify these facilitators by their influence and interdependence level, revealing their relative importance in organisational inclusion.

The paper unfolds systematically, with each section contributing distinct insights. The second section provides context for existing studies. After that, the third section describes the methodology. The fourth section details model development. The study's conclusion and discussion are in the fifth section. Next, the research paper discusses managerial implications. Finally, the paper concludes with the limitations and future research directions.

Literature Review

This study identified eleven enablers of organisational inclusion through literature review and expert advice, leading to an ISM model based on a relationship matrix.

Workplace Culture/Climate

Workplace culture shapes organisational dynamics and employee experiences through a complex interplay of beliefs, values and shared meanings. It fosters belonging and identity, operating at a deeper level of unconscious assumptions (Schein, 2004). There is a profound link between organisational culture and leadership which empowers leaders to influence fundamental norms and values (Jaskyte, 2004; Schein, 1992). Hagner (2000) recognised the significance of workplace culture and created the workplace culture survey as a mechanism for evaluating and comparing individuals' levels of inclusion within different workplace environments. Positive and inclusive workplace cultures, as highlighted by Findler et al. (2007), promote belonging, psychological safety and authentic expression, driving engagement and commitment.

Organisational Policies and Practices

Organisational policies and practices serve as formal guidelines and rules that demonstrate an organisation's commitment to DEI. It is crafted to ensure fairness, inclusive policies offer equal opportunities, fostering a valued and respected environment for all employees. Janssens and Zanoni (2008) highlight the importance of inclusive policies that promote equitable treatment and recognise individual differences. Gallegos (2013) underscores explicit guidelines, rules and policies for respectful interaction. Focused and sharp policies build a strong foundation for DEI. Policies related to maternal leaves, education, health and equitable payment lay the foundation for an inclusive culture (Khan, 2023).

Effective Communication

Effective communication fosters inclusivity by promoting transparency, open interactions and value for all voices. It encourages diverse perspectives and active listening, promoting collaboration and valuable contributions. Janssens and Zanoni (2008) emphasises communication's role in fostering inclusivity, with Tang et al. (2015) and Shore et al. (2011) highlighting collaborative initiatives that involve the exchange of information and diverse perspectives. Transparent discussions and leadership's feedback is crucial for organisational inclusion (Davidson & Ferdman, 2002; Daya, 2014; Ferdman et al., 2010). Furthermore, individuals need information, informal networks and resources for proficient job performance (Mor Barak et al., 1998; Pelled et al., 1999).

Training and Education

Diversity and inclusion-related training and education enhance cultural competence, addressing unconscious biases. It empowers individuals to foster inclusivity, interact effectively with diverse colleagues and cultivate crucial behaviours for organisational inclusivity. Offerman and Basford (2014), highlighted that leaders should prioritise such training to cultivate inclusive behaviours. Training in implicit bias and inclusive leadership skills is crucial for leaders to foster an inclusive work culture (Higginbotham, 2015). This training equips them with the ability to be reflective and responsive to feedback, fostering a more inclusive and supportive leadership style.

Employee Resource Groups (ERGs)

Employee resource groups (ERGs) in organisations support minority employees, offering social networks, resources for development and connections with executives, demonstrating commitment to equity and inclusivity (Dennissen et al., 2020; Douglas, 2008; Friedman & Holtom, 2002; Welbourne et al., 2017). They serve as inclusive business strategies, providing opportunities for expression, information access, interactions, contribution and advancement (Douglas, 2008).

Inclusive Leadership

Inclusive leadership shapes organisational culture by promoting diversity, fostering learning and enhancing performance (Boekhorst, 2015; Booysen, 2013; Cottrill et al., 2014; Gallegos, 2013; Henderson, 2013; Wasserman et al., 2008). Leaders who exhibit inclusive behaviours create psychological safety, increase employee engagement in innovative tasks, enhance unit performance and elevate work engagement (Carmeli et al., 2010; Hirak et al., 2012; Nembhard & Edmonson, 2006). This approach values diverse perspectives, empowers employees and improves organisational outcomes.

Conflict Resolution Mechanisms

Conflict resolution mechanisms in organisations aim to address conflicts fairly by considering diverse perspectives, avoiding biases and fostering collaboration among employees. Research by Roberson (2006) emphasises the importance of inclusive practices, such as creating collaborative environments for resolving conflicts and involving underrepresented groups in decision-making processes.

Work–Life balance

Prioritising work–life balance in organisations enhances employee well-being, job satisfaction and productivity. Deloitte's Australia Research Report

(Deloitte, 2012) identifies work–life balance as a key enabler of inclusion, alongside merit-based practices and organisational policies. Supporting work–life balance is a key factor in fostering inclusion and organisational success (Aysola et al., 2018). Organisations should create environments that support employees in managing personal and professional commitments effectively.

Mentorship and Sponsorship Programs

Mentorship and sponsorship programs offer guidance and advocacy for employees, aiding career development and promoting diversity and inclusion (Hill & Gant, 2000; Hu et al., 2008; Thomas, 1990). Cross-cultural mentoring fosters interactions between diverse individuals, while sponsorship supports underrepresented employees, though lacking the mutual benefits of mentorship (Johnson-Bailey & Cervero, 2004). Integrating these initiatives into broader diversity and inclusion strategies enhances organisational support for all employees (Bohonos & Sisco, 2021).

Inclusive Hiring/Recruitment Practices

Inclusive hiring practices aim to attract diverse candidates through fair and unbiased selection processes (Jackson & Alvarez, 1992; Shore et al., 2009). Transparent recruitment is crucial for fostering inclusivity in the workplace (Daya, 2014). Genuine commitment from organisational leaders in overseeing recruitment, advancement and retention of diverse employees cultivates an inclusive culture (Gallegos, 2013).

Inclusive Decision-Making

Inclusive decision-making, prioritising diverse perspectives, enhances creativity and innovation, fostering employee engagement and dedication. Nishii and Rich (2013) and Mor Barak and Cherin (1998) stress employee participation's significance for organisational inclusivity. Shore et al. (2011) and Tang et al. (2015) identify inclusive organisations actively involving diverse inputs in decision-making through open group discussions. Sabharwal (2014) defines organisational inclusion as employees influencing corporate decisions, creating a culture where the workforce actively shapes important choices.

Methodology

ISM technique was implemented to determine and organise the enablers of organisational inclusion. The initial step involved conducting a thorough literature review to compile a comprehensive list of 11 enablers. In total, 15 experts and professors with expertise in workplace diversity and inclusion were engaged to establish the interrelationships among these variables. Purposive sampling was

used to select participants based on their expertise and skills. ISM technique requires a brainstorming session with selected experts from the respective field (Goel et al., 2022). The data have been collected from a self-structured questionnaire comprising enablers contributing to organisation inclusivity. Experts were asked to complete a pairwise comparison of the 11 enablers based on the type of relationships among them. Subsequently, the ISM was utilised to delve into the intricate connections between these enablers, leading to insightful conclusions about their interdependencies and their role as a cohesive system in promoting organisational inclusion. Moving forward, the next stage focused on conducting a MICMAC analysis. This analysis allowed for a detailed exploration of the complex relationships among the enablers, which were then categorised into four distinct groups known as 'autonomous, dependent, linkages and independent variables'. These categorisations provided a deeper understanding of how the enablers interacted and influenced each other within the organisational context, shedding light on their relative importance and impact on achieving inclusivity.

Interpretive Structural Analysis

Organisational inclusion is impacted by an array of diverse factors, and understanding the relationships between these factors can be immensely valuable for top management to prioritise their focus areas. ISM framework is employed in complex situations where individuals use their expertise to form subjective assessments regarding the connections among the elements (Malone, 1975). For complex problems like achieving organisational inclusion, multiple enablers may play a major role. However, analysing the explicit and indirect correlations between these enablers offers a more accurate understanding than considering them in isolation. ISM facilitates collective insights into these relationships. ISM is both interpretive and structural. It is interpretive, as the collective judgement of the group shapes the linkages between variables. It holds a structural aspect by inferring a holistic system framework from these associations, depicted in the form of an ISM model. The process of ISM involves a series of steps as shown in Figure 1.

Model Development

Structured Self-Interaction Matrix (SSIM)

After establishing the contextual relationships among various enablers, this stage involves creating a matrix that represents the relationships among various enablers. This matrix is called the structured self-interaction matrix (SSIM) and is shown in Table 1. The purpose of this matrix is to depict how different enablers are related to one another. It uses four symbols to explain the direction of a relationship between enablers:

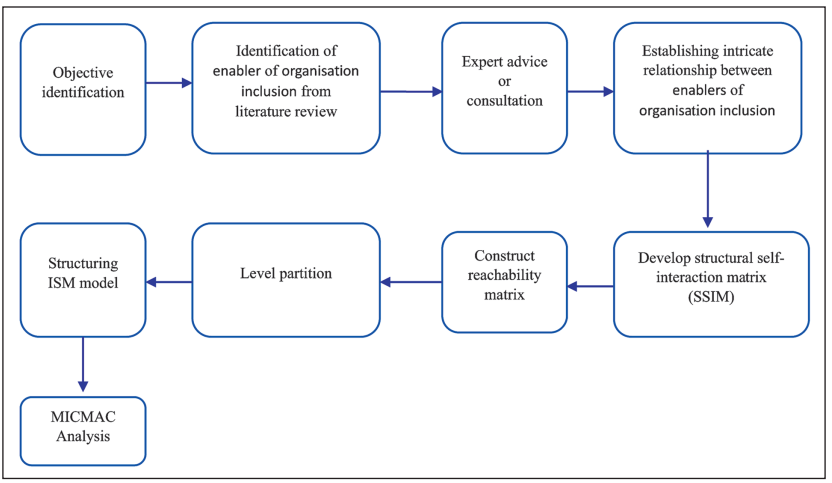

Figure 1. Flow Chart of the ISM Process.

'V: indicates that Enabler p will help achieve Enabler'.
'A: indicates that Enabler q will help achieve Enabler p'.
'X: indicates that both Enabler p and q will help achieve one another'.
'O: indicates that Enablers p and q are unrelated'.
For simplicity and ease of presentation, all 11 identified enablers are represented using codes e.g., T1, T2, T3…, as shown in Table 1.

Reachability Matrix

The SSIM is converted into a binary matrix, known as the reachability matrix, through the substitution of V, A, X and O with 1s and 0s based on specific rules. 'When the SSIM (p, q) entry is V, the reachability matrix entry is 1 and the (q, p) entry is 0. Conversely, if the SSIM's (p, q) entry is A, the reachability matrix becomes 0 and the (q, p) becomes 1. Both (p, q) and (q, p) in the reachability matrix become 1 when the SSIM entry is X. Finally, if the SSIM (p, q) entry is O, the reachability matrix (p, q) and (q, p) entries become 0'.

Upon applying these rules and considering transitivity, 'the final reachability matrix' is obtained (Table 2). The driving power and dependence of each enabler are also indicated in Table 2. The driving power of a variable signifies the extent to which it can contribute to achieving or influencing other variables within the system. It represents the number of variables that the given variable can assist in attaining. Conversely, the dependence power of a variable denotes the degree to which it relies on or is influenced by other variables within the system. It reflects the number of variables that can contribute to attaining the given variable. These driving power and dependence values are crucial for the subsequent MICMAC analysis.

Table 1. Structured Self-Interaction Matrix.

Enablers	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
T1 Workplace culture/climate	V	V	V	V	V	A	V	V	V	X	
T2 Organisational policies	V	V	V	V	V	A	V	V	V		
T3 Effective communication	V	A	A	V	V	A	A	A			
T4 Training and education	V	A	X	V	V	A	X				
T5 Employee resource groups	V	A	X	V	V	A					
T6 Inclusive leadership	V	V	V	V	V						
T7 Conflict resolution	O	A	A	O							
T8 Work–life balance	O	A	A								
T9 Mentorship and sponsorship	V	A									
T10 Inclusive hiring/recruitment	V										
T11 Inclusive decision making											

Table 2. Final Reachability Matrix.

	T1	T2	T33	T4	T5	T6	T7	T8	T9	T10	T11	Driving Power
T1	1	1	1	1	1	0	1	1	1	1	1	10
T2	1	1	1	1	1	0	1	1	1	1	1	10
T3	0	0	1	0	0	0	1	1	0	0	1	4
T4	0	0	1	1	1	0	1	1	1	0	1	7
T5	0	0	1	1	1	0	1	1	1	0	1	7
T6	1	1	1	1	1	1	1	1	1	1	1	11
T7	0	0	0	0	0	0	1	0	0	0	0	1
T8	0	0	0	0	0	0	0	1	0	0	0	1
T9	0	0	1	1	1	0	1	1	1	0	1	7
T10	0	0	1	1	1	0	1	1	1	1	1	8
T11	0	0	0	0	0	0	0	0	0	0	1	1
Dependence power	3	3	8	7	7	1	9	9	7	4	9	

Level Partitions

At this stage, the reachability matrix is used to assess the reachability and antecedent sets for each enabler in the ISM model. The reachability set includes the enabler itself along with other enablers that it is expected to influence. Conversely, the antecedent set comprises the enabler itself and other enablers that are expected to contribute to its attainment. Enablers that appear in both the reachability and antecedent sets are categorised under the intersection set. The ISM hierarchy's levels are determined based on the intersection and reachability sets being the same. At the highest tier of the structure, the identified enablers do not contribute to achieving any other enablers that lie above their level. Once the uppermost-level enablers are recognised, they are separated from the remaining enablers. This iterative process continues until all enablers find their respective positions in the ISM hierarchy. Each cycle of this process is called an 'iteration', and in this case, six iterations have led to the identification of the ISM hierarchy. The final output of iterations 1 to 6 is represented in Table 3, respectively.

Constructing the ISM Framework

The structural model is constructed based on 'the final reachability matrix' and partition table, capturing the relationships among variables using arrows. Each arrow points from a variable that contributes to another variable, indicating the hierarchical level of influence between them. The ISM model is developed by arranging the variables identified during the initial iteration positioned at the uppermost section of the diagram, with subsequent variables positioned downward based on their level of iteration in the partition process. This results in the ISM model as shown in Figure 2. The ISM model reveals that inclusive leadership,

Table 3. Level Partition.

Elements (Mi)	Reachability Set R(Mi)	Antecedent Set A (Ni)	Intersection Set R(Mi) ∩ A(Ni)	Level
1	1, 2	1, 2, 6	1, 2	5
2	1, 2	1, 2, 6	1, 2	5
3	3	1, 2, 3, 4, 5, 6, 9, 10	3	2
4	4, 5, 9	1, 2, 4, 5, 6, 9, 10	4, 5, 9	3
5	4, 5, 9	1, 2, 4, 5, 6, 9, 10	4, 5, 9	3
6	6	6	6	6
7	7	1, 2, 3, 4, 5, 6, 7, 9, 10	7	1
8	8	1, 2, 3, 4, 5, 6, 8, 9, 10	8	1
9	4, 5, 9	1, 2, 4, 5, 6, 9, 10	4, 5, 9	3
10	10	1, 2, 6, 10	10	4
11	11	1, 2, 3, 4, 5, 6, 9, 10, 11	11	1

organisation policies and practices, and workplace culture play pivotal roles as the driving factors in fostering a more inclusive organisational environment, as they are situated at the lowermost level of the hierarchical arrangement.

MICMAC Analysis

MICMAC analysis is a principal approach rooted in the properties of matrix multiplication (Nandal et al., 2019), and serves as a valuable tool to investigate the dependence and driving power of variables in the ISM model, aiding in the classification of crucial variables influencing organisational inclusion. The resulting MICMAC graph (Figure 3) displays the variables' positions based on their dependence power (x-axis) and driving power (y-axis) and categorised them into four distinct clusters. The first cluster, known as autonomous variables, comprises enablers with weak driving power and weak dependence, implying that no variable is entirely detached from the overall system. Thus, the top management needs to address all the recognised enablers of organisational inclusion. The second cluster comprises variables that are dependent on other factors, including enablers with high dependence power but low driving power. Enablers T7, T8, T11 and T3 fall into this category. The third cluster includes variables that serve as links between other enablers, characterised by strong driving power and strong dependence power. Enablers T4, T5 and T9 fall into this group, indicating their importance in driving change and their interconnectedness with other enablers.

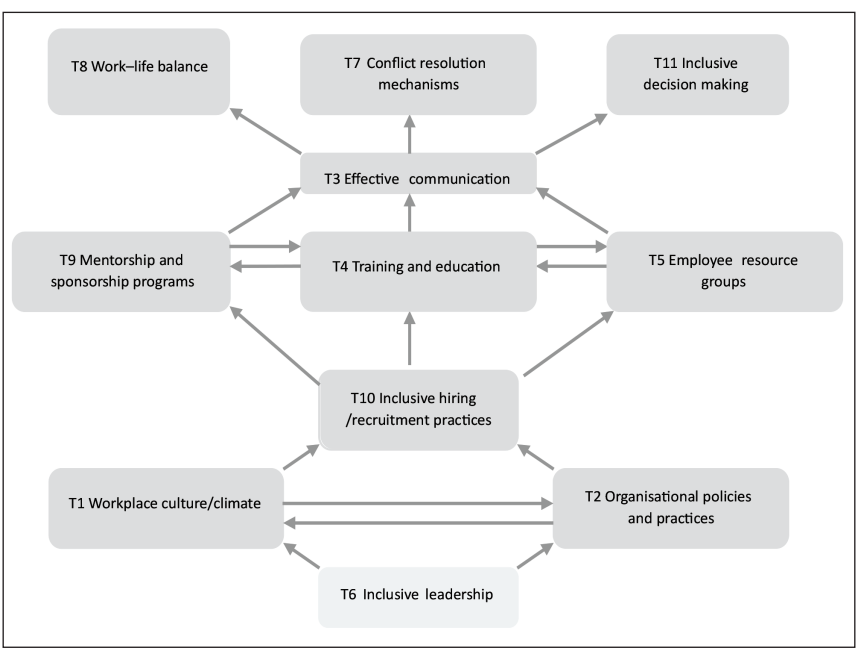

Figure 2. ISM: A Framework for the Factors Facilitating Organisational Inclusion.

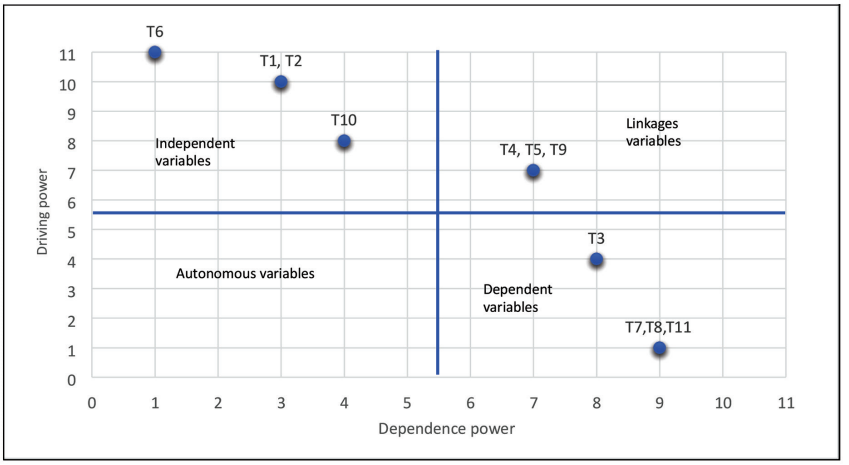

Figure 3. MICMAC Analysis.

Lastly, the fourth cluster consists of variables that operate independently and influence other factors, denoting enablers with strong driving power but weak dependence power. Enablers T6, T1, T2 and T10 fall into this group, signifying their key role in promoting organisational inclusivity.

Discussion and Conclusion

This study utilises the ISM methodology, providing valuable perspectives and a well-organised structure outlining the fundamental drivers of organisational inclusivity. Among the identified enablers, leadership emerged as the most crucial factor influencing organisational inclusivity. Authentic leaders play a significant role in social transformation in terms of conveying the importance of workplace inclusion to employees (Boekhorst, 2015). When leaders treat their team members as valuable contributors, it fosters a sense of acceptance and value, leading to increased feelings of inclusion among employees (Brimhall et al., 2014; Murphy & Ensher, 1999; Schyns et al., 2005). Supervisors can shape employees' perspectives on inclusion through their interactions, ensuring that employees are aware of diversity and inclusion concerns and how they align with organisational objectives (Daya, 2014). Inclusive leadership involves various approaches including training, incentives, hiring, recruitment and advancement of employees, all of which help shape and embed an inclusive organisational culture (Jaskyte, 2004). Hence, prioritising inclusive leadership is essential for enhancing overall organisational inclusivity.

The study further employs MICMAC analysis to assess the influential and interdependent strength of distinct variables within the established framework. It classified the facilitators into the following four groups: 'autonomous, dependent, linkage and driving'. Interestingly, all enablers were found to be crucial in making

the organisation inclusive, as no variables fell into the autonomous quadrant. Driving factors such as inclusive leadership (T6), workplace culture (T1), organisational policies (T2) and inclusive hiring practices (T10) play a crucial part in driving other inclusion enablers. Inclusive leadership has a positive influence on creating an inclusive workplace culture (Dai & Fang, 2023; Kuknor et al., 2023). It actively fosters diversity and inclusion, establishing a culture marked by respect, fairness and equal opportunities for all employees (Kuknor et al., 2023). Notably, the mere presence of diverse teams does not automatically create an inclusive environment but it necessitates inclusive leadership in cultivating an inclusive climate where diverse team members are genuinely valued for their unique contributions to work practices (Ashikali et al., 2021). Furthermore, inclusive leadership significantly contributes to organisational learning through psychological safety and climate (Nejati & Shafaei, 2023). Leaders demonstrating inclusive behaviours can influence organisational policies and practices that support an inclusive environment (Mor Barak et al., 2022). This evidence establishes inclusive leadership drives both inclusive workplace culture and organisational policies.

Linkage factors include mentorship and sponsorship programs (T9), training and education (T4) and ERGs (T5). On the contrary, effective communication (T3), conflict resolution mechanisms (T7), work–life balance (T8) and inclusive decision-making (T11) were identified as dependent variables, as they are influenced by other factors in the framework. Inclusive leadership plays a crucial role in promoting effective communication and contributing to the development of conflict resolution mechanisms by fostering interpersonal relationships and resolving conflicts on time (Cheryl & Joseph, 2022). Additionally, Ahmad and Chowdhury (2022) highlighted the significant impact of effective communication on interpersonal relationships, conflict resolution and decision-making. Therefore, this research substantiates the interconnectedness of these critical factors with inclusive leadership, affirming its indispensable role in fostering an inclusive environment. Overall, the model resulting from this study emphasises the key enablers that strengthen organisational inclusivity, leading to benefits like innovation, creativity, job satisfaction and high performance (Brimhall & Mor Barak, 2018). Focusing on these enablers will create a more inclusive and thriving workplace where employees experience a sense of worth and empowerment, enabling them to offer their utmost for the company's growth.

Managerial Implications

This research paper offers valuable contributions for organisations striving to cultivate a more inclusive workplace. Practical applications include as following: (a) Set clear, measurable objectives for increasing diversity within the organisation, considering aspects like gender diversity and ethnicity diversity; (b) Broaden the lens on DEI by implementing strategies that create a rich culture across the entire organisation; (c) Develop inclusive leadership training programs to enhance leaders' understanding of diversity inclusion and promote authenticity and empathy; (d) Create an environment where leaders actively seek diverse

perspectives, encourage open communication and ensure all team members feel heard and valued; (e) Review and update organisational policies to eliminate biases and promote diversity and inclusion in areas such as recruitment, promotion and work flexibility; (f) Ensure diverse representation in hiring panels, implement blind recruitment techniques and create pipeline development programs to attract and retain diverse talent.

Limitations and Future Research Directions

This section explains the limitations and future directions of the study. First, the ISM framework, relying on inputs from specific experts which may introduce biases. Second, the model lacks statistical validation. Another limitation is the number of variables. Despite conducting a comprehensive literature review, some factors might be overlooked. Opportunities for future research involve evaluating the model's reliability through structural equation modelling. Additionally, research shows that systematic change at the individual, interpersonal and organisational levels create inclusion (Daya, 2014). This study did not explore interpersonal- and personal-level enablers of inclusivity within organisations. Future research could address this aspect to enhance the model's comprehensiveness and effectiveness.

Acknowledgement

The authors are grateful to the anonymous referees of the journal for their extremely insightful suggestions to improve the quality of the paper.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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Original Article

Application of an MCDM Model for Green Supply Chain Management Implementation Using Analytic Hierarchy Process

IMIB Journal of Innovation and Management
4(1) 49–74, 2026

DOI: 10.1177/jinm.231219066
jim.imibh.edu.in

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Abstract

Green supply chain management (GSCM) has been proposed as a potential remedy for business sustainability-related issues. This study offers key green practices that may be applied at the strategic, operational and tactical levels in order to combine conventional supply networks with sustainable supply chains. When establishing the criteria, professional opinions were taken into account in order to identify pertinent components. The analytic hierarchy process has been used to assess the relative weights and relevance of the GSCM criteria. The expert opinions from academic and industrial specialists were used to make pair-wise comparisons. Green practices have been prioritised, and a framework with 4 major factors and 16 sub-factors has been proposed for making intelligent judgements. Findings point out that top leadership commitment to sustainability-related issues, legal compliance, environmentally friendly design, green

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purchasing, health and safety, and regulatory compliance practices are crucial for implementing sustainability across the supply chain. It might be claimed that adopting GSCM practices can boost a company's long-term performance while also increasing its operational eco-efficiency reaping cost and efficiency benefits. The results of the study would assist GSCM practitioners in selecting appropriate strategies in consonance with the governing rules and regulations and customers' requirements.

Keywords

Green supply chain management, environmental factors, social factors, analytic hierarchy process, strategic initiatives

Introduction

In the highly competitive economic climate of today, corporations cannot afford to disregard environmental problems. Green concerns now have a prominent position in industrial companies' strategic planning agendas as a result of increased government restrictions and higher public demands for environmental accountability. Further, due to increasing outsourcing in several sectors and rising globalisation, business today operates and competes on a supply chain (Abdallah & Al-Ghwayeen, 2020; Beamon, 1999; Gawusu et al., 2022; Haiyun et al., 2021; Micheli et al., 2020; Roh et al., 2022). This predicament has resulted in a supply chain that is resource-intensive, extractive and long-term unsustainable. A crucial tactic for companies striving to become environmentally sustainable recently emerged as the integration of social and environmental aspects into supply chain management. The combination of supply chain management and environmental management has only lately started to be referred to as 'green supply chain management' (GSCM). The importance of GSCM is rising for many firms as 'green' concerns are pushed by consumers and regulatory frameworks (Assumpção et al., 2022; Haiyun et al., 2021; Ilyas et al., 2020; Lee, 2008; Luthra et al., 2014a, 2014b). It is a concept that is gaining traction due to its dedication to corporate and business sustainability (de Oliveira et al., 2018; Micheli et al., 2020). It is viewed as a method for improving economic performance and competitive advantage while simultaneously lowering the use of chemicals and hazardous materials, energy usage, waste generation and pollution (Gawusu et al., 2022; Tumpa et al., 2019). Thus, in businesses worldwide, GSCM practices are gradually becoming a primary strategic focus and a crucial component of corporate strategy (Abdallah & Al-Ghwayeen, 2020).

Strategic planning in the context of GSCM refers to the identification of relevant goals and the design of long-term management strategies for those goals. GSCM is viewed as an effective approach for companies to achieve profit and market share goals since it lowers their environmental risks and repercussions while enhancing their ecological efficiency (Kumar et al., 2012). Selecting the right green practices is one of the most important phases in integrating environmental practices into a conventional supply chain (Hsu et al., 2013; Ilyas

et al., 2020; Tumpa et al., 2019). The linkage between business performance, supply chain strategy and environmental strategy was investigated by Wu et al. (2012). To improve business success, they recommended that supply chain and corporate environmental initiatives be coordinated. Thus, decision-makers in supply chains are responsible for creating sustainability orientations for reducing liabilities based on numerous considerations related to economic, environmental and social concerns.

Of late, businesses have started to recognise the need of putting environmental sustainability policies into practice due to growing regulatory, competitive and marketing constraints (Roh et al., 2022; Tumpa et al., 2019). Even while neutrality is presently sought only against external stakeholders and not against enterprises' internal greening activities, the role of environmental concerns in competitive strategy is still viewed as neutral. Businesses engage in green improvement programmes because they want to match up with rival businesses or meet the demands of consumers, regulators, investors, interest groups and the local community. Manufacturing businesses must implement green strategies as society grows more environmentally conscious and concerned, if they are to fulfil their objectives effectively and economically. Green practices must be used in order to open up opportunities for sustainability in order to handle the growing sustainability concerns. Understanding the several green features that might help firms align sustainability in a supply chain context is crucial. The identification of projects that may be used to achieve the triple bottom line (economic, environmental and social) goals of the organisation is crucial for the effective implementation of sustainability in a supply chain. Therefore, this paper aims to understand

(i) The key green practices for introducing sustainability interventions in a supply chain.
(ii) Introducing a framework through a construct design based on the analytic hierarchy process (AHP) on achieving the performance on the triple bottom line.
(iii) To recognise and rank the key strategies that help to achieve an effective adoption and implementation of GSCM.

With these considerations in mind, this research suggests using AHP, an multi-criteria decision making (MCDM) approach, to assess the various GSCM criteria. The article presents and proposes a thorough methodology for implementing GSCM. It assesses environmentally friendly supply chain management strategies through a comparative study including a sample of industries. Four main constructs are the centre of the theoretical framework encompassing the organisational commitment, business operations, social aspect and environmental aspect.

The rest of the paper is structured as follows. The second section examines the relevant literature on GSCM practices, which provides a foundation for identifying significant GSCM elements and implementation methodologies. The third section describes the research framework and methodology. The fourth section covers the results and discussion. The conclusions of the study and the limitations are discussed in the final parts, along with some recommendations for the scope and direction of future research on the subject.

Literature Review

In an organisation, sustainability interventions may be made in a variety of ways, from the early phases of policy creation through their implementation in regular company operations. Organisational commitment to environmental and social considerations is one cutting-edge green practice in coordinating supply chain operations towards a greener supply chain. Hoejmose et al. (2012) assert that senior management support is one of the factors that act as a strategic facilitator to sustainability initiatives, making it essential to engage in strategic thinking on sustainability-related objectives to move towards greening endeavours. Top management leadership and their commitment to the risks connected with sustainability, environmental compliances, policy and planning may be advantageous for organisations that are focused on sustainability. It is also cited as being essential for combining sustainable practices with business operations (Assumpção et al., 2022; Gawusu et al., 2022; Haiyun et al., 2021; Handfield et al., 2002; Lee, 2008; Micheli et al., 2020). Green supply chain (GSC) practices that are integrated into multiple business process segments result in a coordinated GSC. According to Sarkis et al. (2011), GSCM refers to the interorganisational practices of sustainable supply chain management including reverse logistics. Despite differences in definitions, a number of commonly used terms are still used to characterise GSCM, such as 'green purchasing and procurement' (Min & Galle, 2001), 'green logistics and environmental logistics' (Murphy & Poist, 2003), 'supply chain environmental management' (Sharfman et al., 2009) and 'sustainable supply network management' (Assumpção et al., 2022; Ilyas et al., 2020; Yuang & Kielkiewicz-Yuang, 2001).

Environmental rules are considered to be yet another essential instrument that may help raise environmental performance while attempting to comply with legal requirements (Abdallah & Al-Ghwayeen, 2020; Ilyas et al., 2020; Lee et al., 2009). Businesses are encouraged to adopt GSCM practices by government rules and legislation (Drohomeretski et al., 2014; Mudgal et al., 2010; Tumpa et al., 2019). Regulation-compliant environmental standards can promote industry competition, increase profitability and improve environmental performance (Gawusu et al., 2022; Green et al., 2012). The necessity for organisations to boost operational effectiveness in order to satisfy environmental regulations may also boost the firm's competitiveness. Green practices are considered crucial for integrating sustainability into core business processes, which over time can have benefits such as cost and risk reduction (Roh et al., 2022; Zhu & Sarkis, 2004; Zhu et al., 2010). Green production methods including optimum resource utilisation (water, energy and raw materials), the use of non-hazardous materials, recyclable goods and compact designs with enhanced functionality are included in manufacturing as well as design for the environment (DfE) practices at the product design stage. Chiou et al. (2011) and Zhu et al. (2007) discussed initiatives such as design for greener items and greener processes in order to increase the profitability and efficiency of production. A crucial industry for implementing sustainable practices, according to research, is logistics. By using recyclable packaging materials, reducing the need for packing and employing routing

software to speed up logistics, a company's environmental footprint at the distribution stage of the supply chain may be greatly decreased (Assumpção et al., 2022; Meera & Chitramani, 2014; Roh et al., 2022;). Purchasing raw materials or components from 'Green Partners' that fulfil green partner environmental quality requirements and pass an audit method in ISO14000, OHSAS18000 and/or RoHS laws is one of the practices for sustainable procurement (Guang Shi et al., 2012; Ilyas et al., 2020). Reduced material use, closed-loop production and the use of inputs with relatively less negative environmental effects are some of the other operations-related interventions (Abdallah & Al-Ghwayeen, 2020; Thun & Müller, 2010). Thus, environmental standards and certifications may be just as important as environmental legislation in helping to implement sustainable solutions.

Dubey et al. (2015a, 2015b) recognised social sustainability as a driving element for GSCM together with environmental interventions, notably with respect to ethics, working conditions, human rights, safety and community participation. Social responsibility is becoming a key component of creating a global competitive advantage. Businesses are proving their dedication to environmentally friendly practices as a result of growing public concern and awareness for such practices (Fahimnia et al., 2015a, 2015b; Seuring & Müller, 2008; Srivastava, 2007). Greener goods are being developed by manufacturers to meet customer demand and stay competitive in the market. According to Seuring and Müller (2008), stakeholders including clients, investors, regulators and non-governmental organisations (NGOs) are increasingly pressurising businesses to change the way they do business. The need for sustainable or GSCM has increased as a result of these factors. Thus, it is essential to map the whole supply chain and include environmental management capabilities in a conventional supply chain through prioritisation.

Organisational environmental policies developed by management and a supportive organisational culture towards GSC initiatives are the key facilitators of GSC management practices (GSCMP) implementation (Luthra et al., 2014a, 2014b; Micheli et al., 2020). Lower operating costs, more efficiency and improved brand awareness etc. are the primary factors or motivators for a supply chain to go green. However, the practitioners are not yet prepared to use GSCMP across the board. The lack of environmental consideration and strategies is viewed as a major impediment to GSCMP implementation. This can be attributed to the non-availability and access to comprehensive and simple-to-use tools for evaluating the environmental performance of green materials. Further, the lack of expertise of industry practitioners in adopting GSCMP increases the initial cost of GSC programmes that may act as a hindrance. This eventually leads to the tendency to exaggerate the extra expense associated with GSCMP projects. Further, the implementation of GSCMP will be negatively impacted by industry personnel's false perceptions of their environmental duties. Experts and administrative members who are unaware or ignorant of environmental issues and concerns also hinder GSCMP efforts and the espousal of sustainable practices and the growth of green industries (Al Zaabi et al., 2013). Without collaboration amongst all business departments, GSC efforts cannot be executed successfully (Abdallah &

Al-Ghwayeen, 2020; Luthra et al., 2016). Employing green materials can occasionally be uncomfortable, which discourages practitioners from putting GSCMP into practice. Several industries are not interested in a GSC because green products perform poorly in terms of cost–benefit and compatibility. Moreover, the absence of required ecologically friendly items might substantially discourage businesses from implementing GSCM (Lorek & Spangenberg, 2014; Tumpa et al., 2019). Another problem is that consumers do not know much about green products or they focus more on price and quality (Gawusu et al., 2022; Kaur & Awasthi, 2018; Lorek & Spangenberg, 2014; Roh et al., 2022). The market's desire for green products is, therefore, uncertain. This uncertainty makes the adoption and implementation GSCMP initiatives difficult for the practitioners (Luthra et al., 2014a). Furthermore, previous research indicates that, while the lowest price is the most important consideration in low-cost nation sourcing, the suppliers' ability to implement a GSC is frequently disregarded throughout the supplier selection process. As a result, enterprises in developed nations prioritise obtaining the highest possible price for their products as their primary competitive advantage (Roh et al., 2022). In other words, it is more difficult for businesses in emerging nations to use GSCMP when there is no customer demand.

This study uses the AHP, often known as the AHP a multi-criteria decision-making method developed to deal with complex problems incorporating a number of criteria (Saaty, 1977, 1980; Saaty & Vargas, 2012). It is a useful and flexible tool for assisting decision-makers in prioritising tasks and selecting the best course of action while taking into consideration both qualitative and quantitative aspects of a scenario. The AHP breaks down the decision-making process into a hierarchical structure and employs pair-wise comparison matrices. It is a useful technique for analysing decision alternatives, selecting the best options based on the preferences of the decision-maker and rating them (Saaty & Vargas, 2012). The approach ranks the criteria in accordance with the relative importance of the factors impacting decision-making. Researchers have used the AHP technique to study supply chain characteristics, including supplier selection, green practices drivers and obstacles, and green purchasing and procurement (Chan et al., 2014; Ilyas et al., 2020). Handfield et al. (2002) recommended making environmentally responsible purchases based on AHP. Sarkis (2003) used ANP to develop a six-dimension strategic decision framework for managing a GSC. Lee et al. (2009) simulated the capabilities of green providers and the ensuing assessment and selection using Delphi and fuzzy extended AHP. In order to assess the usage of AHP, Vinodh et al. (2013) did a case study of an Indian manufacturing company and used AHP to choose the optimal lean concept. Many authors have employed different multiple criteria decision-making techniques to execute the GSCM, with the AHP 2005 being one of them (Dey & Cheffi, 2013; Haiyun et al., 2021 Hsu & Hu, 2008; Ilyas et al., 2020; Mangla et al., 2015; Mathiyazhagan et al., 2013; Sarmiento & Thomas, 2010; Wang et al., 2013).

The literature highlights some innovative practices that firms have started to adopt that aids to greening of supply chain such as the implementation of an environmental management system, strategies for green procurement, adoption of

green design practices, making use of environment-friendly ingredients, process optimisation, development of green product and use of innovative green practices such as environmentally responsible product packaging and labelling, and use of environmentally friendly distribution and transportation. Table 1 shows the relevant factors considered in the literature for GSCM.

Table 1. Relevant Factors for GSCM.

Constructs/ Aspects	Factors	Definition
Organisational commitment	Support and commitment from leadership	It defines the commitment of the top management in supporting green initiatives.
	Total quality environmental management	It identifies the application of quality management principles in bringing in eco-efficiency in the industrial systems and processes.
	Environmental compliance and auditing	Conformation to environmental laws, regulations and standards related to environmental attributes. Setting up of environmentally conducive policies needed to meet the compliances. Environmental audit can be one of the ways to measuring conformance to compliances.
	Training programmes for employees	Training programmes to build capacity of the employees and other stakeholders in bringing environmental improvements.
Business operations	Design for environment	It is the foremost criteria in imbibing sustainability in product and processes. The green design philosophy can be brought about by adopting cradle to cradle approach.
	Sustainable procurement	Sustainable procurement aims at setting environmental criteria's while purchasing goods and services. Purchasing decisions must meet the environmental objectives of the organisation to ensure least environment impact.
	Green production	Green production involves practices and tools necessary to minimise the environmental impacts of manufacturing processes. It works on the principles of industrial ecology, cradle to cradle, life-cycle analysis and green design.
	Eco-friendly packaging and logistics	Eco-friendly packaging involves increased use of life-cycle inventory and life-cycle assessment to help guide the use of packaging which reduces the environmental impact and ecological footprint. Supply loop management, green logistics or reverse logistics can be one of the ways in ensuring greener logistics.

(Table 1 continued)

(Table 1 continued)

Constructs/ Aspects	Factors	Definition
Social aspect	Supplier and distributor assessment	Involves assessment of suppliers on environmental criteria, viz., resource use, material consumption, waste generation, greenhouse gas (GHG) emissions and social factors.
	Health and safety	Safety and health-related risks and interventions along the supply chain.
	Role of government and NGOs	Involves role of government organisations and NGOs in greening business operations and impacts across the value chain. This involves networking with the external stakeholder's in improving business impacts on environmental and social bottom line.
	Responsible investing	Responsible investment governs investment approaches that integrate environmental, social and governance in the financial decision-making.
Environmental aspect	Renewable energy and energy efficiency	Renewable energy and energy efficiency are the technical interventions which can help in decarbonising the economy. Thrust on RET and EE can help in generating revenues and mitigating climate change-related issues.
	Green buildings	Green building refers to environmentally benign design in the building to lessen the environmental impacts of structures. This can begin from siting to design phase, construction, operation, maintenance and renovation to demolition stage.
	GHG emissions and carbon foot-printing reporting	GHG emission and carbon footprint are mechanisms to measure and manage corporate carbon emissions.
	Environmental key performance indicator (KPI) ratings	KPIs are metrics which help in identifying and assessing the status of the organisation in implanting green practices. KPI can be based on quantum of material consumption in an organisation, percentage of materials recycled, percentage of water recycled and reused, direct and indirect GHG emissions by weight, internal audit scores and percentage of renewable resource used.

Methodology

With the aim of developing a practical model, in-depth analysis of the existing literature as well as unstructured interviews with business executives, academics, consultants and sustainability experts were conducted. The process contributed to the development of a set of pertinent criteria required for evaluation taking into

account the social, economic, technological and environmental concerns. The assessment criteria were created from the viewpoint of the decision-making team, and surveys were sent. As a result, more objective evaluation standards may be examined. In addition, a survey was conducted to determine the GSCM standards. As a consequence, the current study accepted and considered the criteria from a literature review as well as professional viewpoints.

The current study is divided into two stages: first, identifying the criteria to be utilised for alternative evaluation and second, performing the AHP computation, in which weights were assigned to the criteria and their relative relevance was determined. In a natural, pair-wise approach, the AHP technique makes a relative comparison of the criteria or alternatives to a criterion. It does this by employing a fundamental absolute number scale that has been demonstrated in use and supported by physical and choice problem tests. When compared to other scales used for the purpose, the basic scale captures individual preferences for both quantitative and qualitative features equally well or better. It converts each individual's choices into ratio scale weights that may be put together to generate a linear additive weight for each alternative. The outcome can be used to rank and compare possibilities, assisting the decision-maker in making a choice. Table 2 shows the list of criteria that were taken into consideration for the study based on the literature support.

Data Collection

This study conducted a comprehensive search of academic journals, databases and bibliographical sources related to the topic of GSC practices. A thorough literature search of real-world case studies on GSCM practices and their implementation was carried out to identify the key driving forces behind the decision to choose and the final implementation of green practices. A well-structured standardised questionnaire was developed and administered to the experts who rated and ranked all the criteria. The responses given by the several experts in this field were categorised according to industry. The six sectors that were chosen and categorised were consulting, banking, IT, FMCG, energy and telecom. Consulting refers to the remarks and responses given by experts who have cross-functional domain expertise across many businesses. Each aspect was studied with respect to the industry type as to which of the aspects and factors are important and critical to their respective supply chains in increasing the green quotient.

The next two phases in which the data are used are outlined. The idea (aspects) and its constituent parts are first determined through a literature study in order to arrive at the multivariable criteria for an efficient (green) supply chain. After expert examination, 16 practices in total were chosen for further evaluation to determine their relative importance utilising AHP (Tables 3–7). A survey questionnaire with four main elements defining the sustainability in the supply chain and various sub-factors was developed in order to gather data for this (Figure 1). This poll solicited responses from several business experts in the supply chain, environment, social, sustainability and climate change domains.

Table 2 Environmental and Social Evaluation Criteria Used in the Study.

Factors	Sources
Support and commitment from leadership	Dashore and Sohani (2013), Rha (2010), Büyüközkan and Çifçi (2012), Luthra et al. (2016), Zhu and Sarkis, (2007), Abdallah and Al-Ghwayeen (2020), Gawusu et al. (2022)
Total quality environmental management	Rha (2010), Green et al. (2012), Ilyas et al. (2020)
Environmental compliance and auditing	Rha (2010), Min and Galle (2001), Tumpa et al. (2019)
Training programmes for employees	Bowen et al. (2001), Darnall et al. (2008), Menzel et al. (2010), Mathiyazhagan et al. (2013, 2014); Toke et al. (2012), Roh et al. (2022)
Design for environment	Kumar and Chandrakar(2012), Kuo et al. (2012), Wang et al. (2013),Haiyun et al. (2021)
Sustainable procurement	Chen et al. (2012), El Tayeb et al. (2011), Min and Galle (2001), Yuang and Kielkiewicz-Yuang (2001), Micheli et al. (2020), Roh et al. (2022)
Green production	He et al. (2007), Rha (2010), Liu et al. (2005), Sangwan (2006), Micheli et al. (2020), Roh et al. (2022)
Eco-friendly packaging and logistics	Beamon (1999), Chhabra et al. (2017), Micheli et al. (2020), Roh et al. (2022)
Supplier and distributor (stakeholder) assessment	Bali et al. (2013), Hsu and Hu (2008), Lu et al. (2007), Ilyas et al. (2020)
Health and safety	Cosimato & Troisi (2015), Mutingi (2013), Guang Shi et al. (2012), Micheli et al. (2020), Roh et al. (2022)
Role of government and NGOs	Vermeulen and Kok (2012), Haiyun et al. (2021)
Responsible investing	Flammer (2013), Rha (2010), Henriques and Sadorsky (1996), Micheli et al. (2020), Roh et al. (2022)
Renewable energy and energy efficiency	Liu et al. (2005), Sangwan (2006), Haiyun et al., (2021)
Green building	Theaker and Cole (2001), Tumpa et al. (2019), Ilyas et al. (2020)
GHG emissions and carbon foot-printing reporting	Pattara et al. (2012), Young et al. (2012), Micheli et al. (2020), Roh et al. (2022)
Environmental KPI ratings	Hervani et al. (2005), Dey and Cheffi (2013), Azevedo et al. (2011), Shaw et al. (2010), Tumpa et al. (2019), Micheli et al. (2020), Roh et al. (2022)

The research framework consisting of hierarchical levels employed in the current study has been shown in Figure 2. The purpose, criteria, sub-criteria and alternatives/factors of the AHP approach are broken down into the problem's aim, according to Saaty (1980) and Dey and Cheffi (2013). The hierarchical structure (Figure 2) consists of three tiers: Level 2 evaluates the relative value of the four categories of GSC practices, Level 3 evaluates the relative value of the

Table 3. Pair-wise Assessment Matrix for 'Organisational Commitment' Category for GSCM.

	Organisational Commitment						
	A1	A2	A3	A4	GM	Weight	Rank
A1	1	3.181818	0.486111	5	2.326698	0.486111	1
A2	0.314286	1	0.152778	1.571429	0.731248	0.152778	3
A3	0.542857	1.727273	1	2.714286	1.263064	0.263889	2
A4	0.2	0.636364	0.097222	1	0.46534	0.097222	4

Note: A1: Support and commitment from leadership; A2: Total quality environmental management; A3: Environmental compliance and auditing, A4: Training programmes for employees.

Table 4. Pair-wise Assessment Matrix for 'Business Operations' Category for GSCM.

	Business Operations						
	B1	B2	B3	B4	GM	Weight	Rank
B1	1	1.153846	2.142857	5	1.875114	0.394737	1
B2	0.866667	1	1.857143	4.333333	1.625099	0.342105	2
B3	0.466667	0.538462	1	2.333333	0.875053	0.184211	3
B4	0.2	0.230769	0.428571	1	0.375023	0.078947	4

Note: B1: Design for environment; B2: Sustainable procurement; B3: Green production; B4: Eco-friendly packaging and logistics.

Table 5. Pair-wise Assessment Matrix for 'Social Aspect' Category for GSCM.

	Social Aspects						
	C1	C2	C3	C4	GM	Weight	Rank
C1	1	0.781818	3.909091	1.592593	1.485325	0.316176	2
C2	1.27907	1	5	2.037037	1.899835	0.404412	1
C3	0.255814	0.2	1	0.407407	0.379967	0.080882	4
C4	0.627907	0.490909	2.454545	1	0.932646	0.198529	3

Note: C1: Supplier and distributor assessment; C2: Health and safety; C3: Role of government and NGOs; C4: Responsible investing.

Table 6. Pair-wise Assessment Matrix for 'Environmental Aspect' Category for GSCM.

	Environmental Aspects						
	D1	D2	D3	D4	GM	Weight	Rank
D1	1	5	1.296296	1.129032	1.644732	0.35	1
D2	0.2	1	0.259259	0.225806	0.328946	0.07	4
D3	0.771429	3.857143	1	0.870968	1.268793	0.27	3
D4	0.885714	4.428571	1.148148	1	1.456763	0.31	2

Note: D1: Renewable energy and energy efficiency; D2: Green buildings; D3: GHG emissions and carbon foot-printing reporting; D4: Environmental KPI ratings.

Table 7. The Overall AHP Matrix on the Construct.

Dimensions and Global Priority Weighting and Rank		Sub-categories		Weights	Banking	IT	FMCG	Energy	Telecom	Consultancy	Overall	Rank
Organ-isational commit-ment	0.211 Rank 3	Support and commitment from leadership	A1	0.486	0.031	0.019	0.019	0.006	0.019	0.028	0.122	1
		Total quality environmental management	A2	0.153	0.008	0.008	0.008	0.002	0.008	0.006	0.038	3
		Environmental compliance and auditing	A3	0.264	0.014	0.018	0.011	0.011	0.004	0.009	0.066	2
		Training programmes for employees	A4	0.097	0.005	0.005	0.005	0.001	0.005	0.003	0.024	4
Business opera-tions	0.410 Rank 1	Design for environment	B1	0.395	0.020	0.005	0.020	0.010	0.020	0.024	0.099	1
		Sustainable procurement	B2	0.342	0.021	0.009	0.017	0.004	0.017	0.017	0.086	2
		Green production	B3	0.184	0.012	0.005	0.010	0.002	0.008	0.010	0.046	3
		Eco-friendly packaging and logistics	B4	0.079	0.005	0.001	0.005	0.001	0.003	0.004	0.020	4
Social aspect	0.109 Rank 4	Supplier and distributor assessment	C1	0.316	0.014	0.005	0.014	0.005	0.023	0.019	0.079	2
		Health and safety	C2	0.404	0.018	0.030	0.006	0.006	0.030	0.012	0.101	1
		Role of government and NGOs	C3	0.081	0.005	0.005	0.002	0.002	0.005	0.001	0.020	4
		Responsible investing	C4	0.199	0.013	0.006	0.006	0.003	0.013	0.008	0.050	3
Environ-mental aspect	0.270 Rank 2	Renewable energy and energy efficiency	D1	0.350	0.031	0.006	0.006	0.006	0.006	0.031	0.088	1
		Green buildings	D2	0.070	0.004	0.004	0.004	0.001	0.004	0.003	0.018	4
		GHG emissions and car-bon foot-printing reporting	D3	0.270	0.014	0.011	0.011	0.018	0.004	0.011	0.068	3
		Environmental KPI ratings	D4	0.310	0.032	0.006	0.006	0.006	0.006	0.019	0.078	2

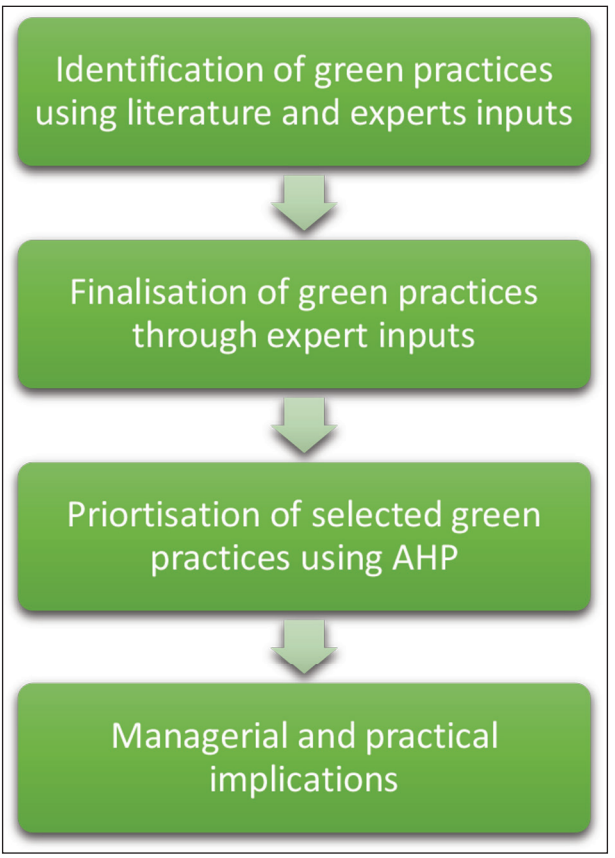

Figure 1 Decision Hierarchy of Green Practices for GSCM.

16 sub-practices and Level 1 evaluates the GSC practices themselves. Weights were given to each category of green practices in pair-wise comparison matrices in order to determine the relative significance.

The stepwise procedure employed in this study is detailed below.

Step 1: Establishing the goal

By identifying green practices (environmental and sustainability factors), the goal of making the supply chain more environmentally friendly was reviewed.

Step 2: Establishing the hierarchical framework

After establishing the hierarchical structure comprising decision components, the decision-makers were asked to assess option alternatives and criteria pair-wise using a scale.

Step 3: Developing the pair-wise comparison matrix

Next, the pair-wise comparison matrices set was developed. The elements in the level directly underneath each element in a higher level were compared to each other.

Step 4: Calculating the eigenvalues, eigenvectors and relative importance weights

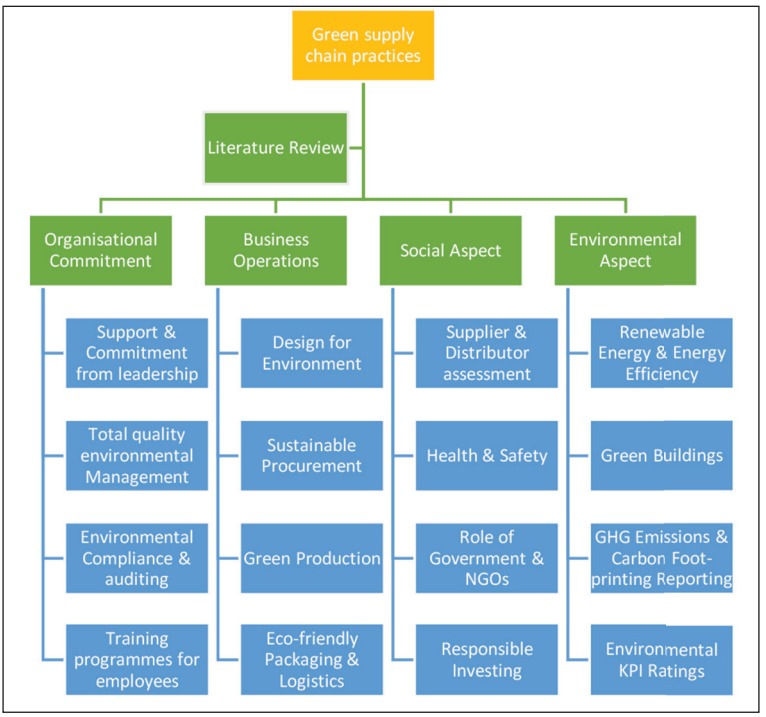

Figure 2 . Hierarchal Levels Representing the Factors and Sub-factorial Structure of the Construct.

Eigenvalues and eigenvectors were calculated using pair-wise comparison matrices that were analysed to determine the relative relevance of the factor weights.

Step 5: Calculation of consistency ratio

The consistency index (CI) was computed for each matrix using Equation (1), while, Equation (2) was used to determine the consistency ratio (CR) based on the CI and random consistency index (RI).

The CI and CR are defined as follows:

CI for each matrix of order n by the equation:

$$\mathrm{CI} = (\lambda\max - n)/(n-1), \text{ where } \lambda\max \text{ is the maximum average value} \quad (1)$$

The CR is then computed using the following equation:

$$\mathrm{CR} = \mathrm{CI}/\mathrm{RI} \quad (2)$$

Where depending upon the order of matrix RI varies accordingly.

If the value of CR is equal to or less than that value, or if it implies a high degree of consistency in the comparison assessments represented in that matrix, the evaluation inside the matrix is judged to be acceptable. In contrast, if CR exceeds the allowed number, there has been some discrepancy in the evaluation process and has to be evaluated, reassessed and improved. When ranking a

collection of criteria, a decision-maker's dependability is improved by having an adequate CR.

Result and Discussion

In order to rate the GSCM practices, the study used an analytical hierarchical framework. Organisational commitment, company operations, social aspect and environmental aspect were all assessed against one another on a pair-by-pair basis. The construct comprises 16 auxiliary factors in addition to 4 core variables. Pair-wise comparisons were performed for each category of GSC practices, and relative weights were established (Tables 3–6).

Organisational Commitment

GSCM mechanism aids in the integration of environmental issues into the supply chain management process starting from the product development stage to its final delivery.

The AHP table shows that leadership support and commitment are among the most important and beneficial factors for a firm to start greening its supply chain when comparing the four main components of this component across all industries. The internal management role play can be seen as a tactical facilitator for attaining the goals of GSCM implementation. A supply chain's sustainability may be considerably increased while reducing risks and liabilities by setting long-term strategic goals. As stated by senior management and its leadership, GSCM adoption in any organisation should ideally come from the business philosophy of the company (Abdallah & Al-Ghwayeen, 2020; Dubey et al., 2015a, 2015b; Haiyun et al., 2021; Lorek & Spangenberg, 2014; Luthra et al., 2016; Micheli et al., 2020; Roh et al., 2022; Tumpa et al., 2019). The findings of the current study also support the same notion. The engagement of senior management, commitment to implementing environmentally friendly practices and responsibility towards environmental goals are, therefore, necessary for creating a roadmap for becoming green (Assumpção et al., 2022; Haiyun et al., 2021; Ilyas et al., 2020; Luthra et al., 2016). Top-level commitment may assure access to any necessary financial and human resource investments. Strong governance structures and strong commitment from decision-makers are crucial for a company to pick sustainability measures that directly support the business goals. Thus, in order to embrace sustainability efforts in supply chains, top management must be committed to going beyond compliance and regulation, and the government must play a role through legislation.

Environmental compliance and audits rank as the second-highest priority in the area of organisational commitment. It is evident that regulations, laws, standards and audits are evolving as part of compliances, which are the main facilitators in dictating environmental measures (Malviya & Kant, 2016; Micheli et al., 2020; Roh et al., 2022; Tumpa et al., 2019). In order to enhance environmental and economic performance, the organizations must redesign

their processes and revamp their systems to become compliant in their business operations (Gawusu et al., 2022; Koh et al., 2012; Lee et al., 2009). According to Drohomeretski et al. (2014) and Mudgal et al. (2010), it may be used as a framework for analysing current practices and implementing strategies that satisfy environmental criteria. Environmental compliance and audits give better insight into the compliance status of a facility and its operations. These can be used to identify environmental liabilities related to a facility's operations, such as sloppy maintenance, careless handling, storage, disposal of hazardous materials, operational inefficiencies, faulty or misused equipment that results in spills or releases of hazardous materials, risks to human health, or improper permitting and recordkeeping that can lead to fines and the loss of a company's operating licence.

Business Operations

When comparing the four primary components of this characteristic across all industries, DfE has the greatest value. The DfE concept promotes the idea that environmental issues should be considered at every level of the manufacturing process. The functionality viewpoint includes design for recycling (RECY), manufacture (REMAN), reuse (REUSE), disassembly (DISASS), and disposal (DISP). If goods are to considerably minimise environmental damage throughout the course of their existence, environmentally friendly technologies must be adopted from the beginning of the design process onward. Planning for the environment may also be very profitable when the product is still in the operating stage. DfE tools can assist in decreasing the efforts required for environmental evaluation because of their direct integration into the designer’s workflow.

The second most significant argument in favour of greening operations was found to be sustainable procurement. Two instances of GSCM tactics include local sourcing and buying eco-friendly products. Given the concept of global supply chains, where producers and buyers are distributed around the world, local sourcing may be a positive practice that is connected to sustainability. Sustainable purchasing is given a high emphasis by businesses nowadays. It may promote competitiveness, cut down on waste, boost profitability and improve a company's reputation. By sourcing items, they might support the growth of the local economy and the creation of jobs. It also encourages cost reductions and revenue growth. According to Teixeira et al. (2016), one of the simplest methods to implement green practices is through green buying. It minimises the environmental impact while maximising economic and social value by adding pertinent sustainability factors into the procurement practice. As logistics and transportation operations contribute 5.5% of the world’s carbon emissions, focusing on these activities may have a major influence on a company's GHGs emission and carbon footprint. Therefore, from a sustainability standpoint, logistics-related operations can significantly affect the performance of the supply chain. To enhance environmental performance throughout the logistics stage of the supply chain, transportation efficiency, route optimisation and storage may be used.

Social Aspect

Health and safety has the highest value when the four parts of this element are evaluated across all sectors. Taking care of health and safety issues may be seen as a way to increase staff productivity, which is advantageous for the company. The second most crucial factor is the appraisal of suppliers and distributors. As a result, suppliers are one of the key stakeholders and significant contributors to greening supply chains (Malviya & Kant, 2016). The cooperation of suppliers at the upstream and distributors at the downstream of the supply chain is essential to achieving the anticipated environmental goals. Businesses are using a multitude of regulatory inspections and processes to ensure that suppliers follow environmental norms and criteria (Abdallah & Al-Ghwayeen, 2020; Haiyun et al., 2021; Tumpa et al., 2019). Walton et al. (1998) developed a strategy for greening the supply chain and advocated for supplier's participation in environmental management practices. Hervani et al. (2005) developed an integrated framework for the analysis, creation and assessment of GSCM performance tools. By incorporating external stakeholders, they might be linked to proactive supply chain interventions and could be crucial to business operations that are environmentally friendly. Increased environmental performance, capacity expansion and minor operational improvements are only a few benefits of an effective supplier assessment procedure (Assumpção et al., 2022; Gawusu et al., 2022; Haiyun et al., 2021; Ilyas et al., 2020; Micheli et al., 2020; Roh et al., 2022; Zhu et al., 2013). The benefits frequently involve purchasing from suppliers who provide high standards for product and service levels together with enough capacity and commercial stability, according to Zhu et al. (2013). Noci (1997) has created the performance standards for the green supplier selection procedure. Shen et al. (2013) recommended evaluating the green suppliers using a fuzzy method. Finding and eliminating supply chain-hidden cost drivers can be aided by customer and supplier assessment. To build a variety of suppliers and enhance environmental performance, supply chain strategies can be adopted, such as those that are risk- or opportunity-oriented. A strategic approach to managing supplier relationships is a consideration at each stage of this process and is a key enabler for creating mutual value.

Environmental Aspect

When comparing the four key variables of this feature across all industries, the AHP table revealed that renewable energy and energy efficiency (0.350) had the highest value, making it the most important and important element. One method of transitioning to a low-carbon economy in an environmentally friendly approach is energy management. Energy efficiency may be seen as a low-hanging fruit, with the potential to drastically reduce energy waste and carbon emissions through optimising energy usage through better housekeeping, technological development, retrofits or technological innovation. In response to the world's rising energy requirements and concerns about climate change, the transition to renewable

energy technologies is opening up new possibilities for alleviating pressure on conventional sources of energy. Investment in the technologies advocating renewable energy is another initiative that can lessen the environmental footprints that traditional energy sources leave behind on a global scale. When this is seen as a strategic asset as opposed to a tactical investment, it may result in cost savings and reduced risk throughout the supply chain.

The second most crucial factor is the environmental KPI rating (0.310). The degree to which sustainability goals and targets have been met in real practice may be determined using KPIs (Abdallah & Al-Ghwayeen, 2020; Haiyun et al., 2021). Well-defined supply chain performance indicators can help with environmental quality measurement and management. Performance indicators based on environmental elements such as GHG emissions, health and safety, resource consumption (energy, water and materials), waste reduction, stakeholder engagement, product quality and material handling can be set to measure a company's performance along the triple bottom line, in accordance with Harms et al. (2013). Many conceptual frameworks for integrating social and environmental responsibility issues into performance measurement systems have been created and employed. The establishment of KPIs on environmental and social qualities has been advocated in earlier research studies (Assumpção et al., 2022; Gawusu et al., 2022; Haiyun et al., 2021; Ilyas et al., 2020; Searcy, 2012). Further, these KPIs can be used in the performance measurement framework to benchmark the company's sustainability endeavours.

Green supply networks are thought to benefit greatly from measures such as GHG emissions and carbon footprint. The GHGs emitted over time by various operations or businesses in the supply chain are measured by carbon footprints. This activity enables the monitoring of scope three emissions, the majority of which are produced through supply chain activities. The integration of these externalities into operations, procurement and logistics can minimise supply chain consequences by investing in relevant environmental interventions (cleaner technology, cleaner production and sustainable procurement) (Abdallah & Al-Ghwayeen, 2020; Assumpção et al., 2022; Haiyun et al., 2021; Ilyas et al., 2020; Lee et al., 2012). This necessitates a thorough approach that links supply chain decisions to the triple bottom line of profit, profit and planet (Kumar et al., 2012; Tumpa et al., 2019). Thus, it can be concluded that KPIs could be instrumental in deploying sustainability (Micheli et al., 2020; Roh et al., 2022).

The overall prioritisation comprising of the weighting and ranking of criteria and sub-criteria to implement GSCM is given in Table 7. Business operations received the highest global weighting and social aspects the lowest global weighting. They are ranked first and fourth, respectively. Environmental aspects and organisational commitment obtained second and third rank, respectively. Further, various sub-factors in each dimension were also ranked. A pair-wise matrix was created to further determine the relative significance and weights (Table 7). The leadership support and commitment factor has the highest rating in the organisational commitment component (0.486), followed by environmental compliance and auditing (0.264). Similarly to this, the aspect of business operations assigned DfE (0.395) and green practices such as sustainable

procurement the highest weight. The second most significant element in the greening of the supply chain, after health and safety (0.40), was the practice of reviewing suppliers and distributors, which came in at number two (0.316). The AHP matrix indicated that the relevance of creating KPIs (0.310) and using renewable energy (0.350) for the 'Environment' element was highest.

Conclusion

The current study may be useful in understanding various elements and strategies and how they relate to a company's efforts to become green. The proposed framework may assist decision-makers to gauge how different stakeholders in an organisation see GSCM and may help managers better grasp GSCM practices. This study might aid GSCM practitioners in choosing appropriate tactics to more closely align with environmental standards and consumer demands. The organisations will be able to gain cost advantages as well as a better brand image with the proper selection of GSCM implementation tactics. The proposed model presented in the study would help the decision-makers to be better prepared, understand and address the several complexities of the GSCM problem and prioritise them for competitive advantage and efficient management. The recommended AHP-based decision model may ease decision-making as it thoroughly assesses the relative dominance of the pertinent criteria and alternatives by explicitly accounting for the various types of interdependencies existing in the decision structure.

The current study highlights several supply chain components and creates a paradigm for GSCM. The findings of the study may serve as guidelines for companies to streamline their operations by considering the social and environmental aspects. The suggested method, which is based on expert paired comparison assessment, has benefits for both physical and abstract criteria. The research may be broadened to include other industrial sectors because the various elements may possibly differ based on the type of industry. The approach might also help supply chain managers prioritise their sustainability projects for corporate goals including risk reduction, cost control and income development.

Since there could be prejudices and misunderstandings regarding the underlying issues that lead to insufficient solutions, the presented model cannot be applied to all situations. This may be considered as one of the limitations of this study. Thus, it is imperative that future research ensure that there is less misunderstanding. Depending on the social, cultural and geographic environment, the ranking for the evaluation criterion may also alter. In this area of study, it may also be beneficial to assess the model using sensitivity analysis and change as necessary by adding or eliminating particular criteria. The decision-makers will be able to make a conclusion that is more sensible, obvious, logical and systematic as a consequence.

Declaration of Conflicting of Interest

The authors have no competing interests to declare that are relevant to the content of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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Original Article

The Impact of COVID-19 Pandemic on E-commerce: Primary Evidence from India

IMIB Journal of Innovation and Management
4(1) 75–92, 2026

DOI: 10.1177/ijim.241241252
jim.imibh.edu.in

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Abstract

This study aims to examine the impact of the COVID-19 pandemic on the e-commerce market in India. The pandemic had a detrimental effect on India's economic growth, with trade and commerce being one of the worst affected segments of the economy. While the COVID-19-induced lockdown across the country severely affected significant retail chains and micro-retailers, it also created a boom in the e-commerce market. In this context, a survey was conducted across India to study the impact of COVID-19 on e-commerce in India using primary data. The results after data analysis clearly suggested that the post-pandemic period witnessed a significant rise in all spheres of the e-commerce market, and public familiarity with this concept also increased, which eventually resulted in an increase in both demand for and revenue from e-commerce.

Keywords

COVID-19, e-commerce, consumer behaviour, revenue, retail chains

Introduction

Any crisis, in general, could have three possible ramifications. First, it could lead to innovations to cope with the crisis. Second, it could push societies to use the old ideas effectively that were already in existence but ignored earlier. The third possibility is that a crisis could, at times, act as a catalyst in the process of adapting

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to change that was underway even before the crisis unfolded. The world witnessed an unprecedented health emergency in the form of the COVID-19 pandemic, which claimed millions of lives. COVID-19 changed the way the world lives and conducts its daily business. Time spent at home increased as consumers suddenly found themselves confined to smaller spaces due to travel restrictions, and offices shifted from traditional settings to work-from-home environments. On the other hand, businesses had to quickly adapt their business processes as the preferences shifted from shopping in traditional offline outlets to online purchases (Amornkitvikai et al., 2021). They were also faced with the challenge of maintaining their competitive advantage over sales volumes, the number of active clients and the quality of services provided in the wake of disruptions in the long and complex supply chains.

It is to be noted that in this context the world witnessed all three ramifications. Businesses reinvented themselves in order to serve their customers in innovative ways. On the other hand, the already existing ideas that were largely underrated were put to use effectively, for instance, 'work from home' and 'online teaching'. 'E-Commerce' too falls under the same category. Indeed, the existing concept of e-commerce started to be used far more effectively than before, and in fact, societies across the world adapted to the change faster, as COVID-19 acted as a catalyst.

According to a report released by Fidelity Information Services (FIS) (FIS Global, 2021), an international financial and technology organisation that studies payment trends in 41 countries, the global demand for digital commerce increased in 2020 during the coronavirus period, especially as consumers in many countries, including India, opted for new policies. According to FIS, the 'Buy Now, Pay Later' approach gained popularity in online payment methods. On the other hand, a survey of 3,700 consumers in nine emerging and developed economies by the United Nations Conference on Trade and Development (UNCTAD) on 'COVID-19 and e-commerce' reported that consumers in emerging economies made great strides in online shopping during the pandemic (United Nations Conference on Trade and Development [UNCTAD], 2021). According to the UNCTAD report, more than half of the survey's respondents have frequently shopped online since the outbreak and relied heavily on the Internet for news, health information and digital entertainment. As such, many predictions underscore that the global e-commerce market grew the fastest during the COVID-19 pandemic. Even an OECD report found that COVID-19 resulted in a long-term shift from luxury goods to daily necessities through e-commerce. It also suggested how policymakers across the world can make use of the digital transformation in the retail segment in order to support business adoption (OECD, 2020).

In this context, the purpose of the present study is to further explore the impact of the COVID-19 pandemic on the e-commerce sector and to analyse in detail its development trends in India during the COVID and pre-COVID periods. E-commerce was in existence long before the pandemic struck India. However, the growth of the e-commerce market in India can be divided into two phases for a better understanding. The first phase is the one before the COVID-19 pandemic, and the second phase is the post-COVID-19 period. During the first phase, the

growth of e-commerce was driven by several factors such as strong and sustainable growth of Internet users, the growing awareness of online shopping, increase in the online launch of products, low purchases and so on. Moreover, the growing number of unique products in the market and the reduction in commodity prices due to the direct distribution channel also further contributed to the growth of the e-commerce market in the country. However, after COVID-19 enveloped the country, e-commerce got a major push.

In this context, using the primary data, a survey was conducted nationwide to study the impact of COVID-19 on e-commerce in India. The researchers interviewed about 200 individual respondents as consumer group representatives from all over India using the questionnaire method of data collection, and Google Forms was used for ease of access and ease of circulation. The responses were collected during the period April–May 2021. The study period was divided into three parts to facilitate comparison and ease of pointing out contrast: (a) pre-COVID, (b) COVID wave 1 and (c) COVID wave 2.

The rest of the study is organised as follows. The second section deals with how e-commerce acted as a saviour in people's daily lives during the COVID-19 pandemic. The third section discusses issues related to data collection, while the fourth section reports data interpretation and discusses results. Finally, the fifth section summarises the study and provides broad conclusions.

Literature Review: E-commerce as the Saviour During COVID-19

The COVID-19 pandemic caused millions of deaths across the world and posed an unprecedented challenge to public health, food systems and the world of work. The social structure and economy of the nation were in shambles due to the pandemic, with tens of millions of people at risk of reaching extreme poverty levels and malnutrition at an all-time high (Howton, 2020). Almost 3.3 billion people from the global working population were at risk of losing their livelihoods (British Broadcasting Corporation [BBC] News, 2020). Employees in the informal economy were especially vulnerable due to a lack of social protection and quality health care. Earning during the lockdowns became increasingly challenging, leading to a fall in purchasing power and consumption capability.

On the other hand, the complete lockdowns imposed by the governments worldwide to tackle the ongoing pandemic had a positive impact from a safety standpoint. Still, the economy tumbled into turmoil in most nations, especially India. According to the data published by the Ministry of Statistics and Programme Implementation (MOSPI, 2021), the growth rate in the manufacturing sector plunged to −9.4% in the fiscal year 2021 (Statista, 2021). As a direct response to the pandemic, the Indian automotive industry suffered a loss of ₹2,300 crore per day, and an estimated job loss in the sector was about ₹3.45 lakhs (*The Economic Times*, 2020). The service sector plummeted in terms of the gross value added per cent per annum to a growth rate of −8.36%, whilst the service sector was consistently contributing more than 50% of the nation's GDP for more than

10 years (Dogga et al., 2023; *Statistics Times*, 2021). The retail market suffered severely in the service segment as business activities reached a standstill. People stopped visiting offline retail stores and markets due to curfews and lockdowns. As a result, the revenues of the offline stores and micro-retailers fell.

However, a positive development took place in this context, that is, the rise of e-commerce, which came as a saviour. Amidst the fear of economic contraction, the frequency of online purchases skyrocketed as it was the only safe and convenient option. COVID-19 catalysed this shift in consumer behaviour forced by pandemic-driven panic buying and stocking by the people (Sekar & Santhanam, 2022). People realised the convenience of online platforms, which triggered a significant shift in customers' overall purchasing behaviour. Online stores such as Flipkart, Amazon and Snapdeal, which once served the purpose of purchasing non-essential commodities, offered self-care products, food and grains, and other essential commodities, which, in fact, top their respective retail lists of consumers. This is why it is the primary focus of this research.

The objective is to study the impact of the COVID-19 pandemic on the e-commerce market with respect to data collected on online purchases, transactions and over-the-top streaming by the people. The pandemic-stricken atmosphere and the mass hysteria reportedly were a breeding ground for the rise of the e-commerce industry. A change in consumer behaviour was also fuelled by the pandemic. As shown in Figure 1, the country was nearing the end of the second wave of the virus, and by the time of the third wave, most of the population had received at least one dose of the vaccine, raising hopes that the third wave would not be as hard-hitting as the first and second. However, this is purely speculative as new variants/strains of the original SARS-CoV-2 virus have emerged, each more virulent than the last.

Due to excessive losses, most major retail chains and even micro-retailers reportedly transitioned to using e-commerce tools to reach customers. Major steps were taken by offline stores, such as the use of contactless payment systems,

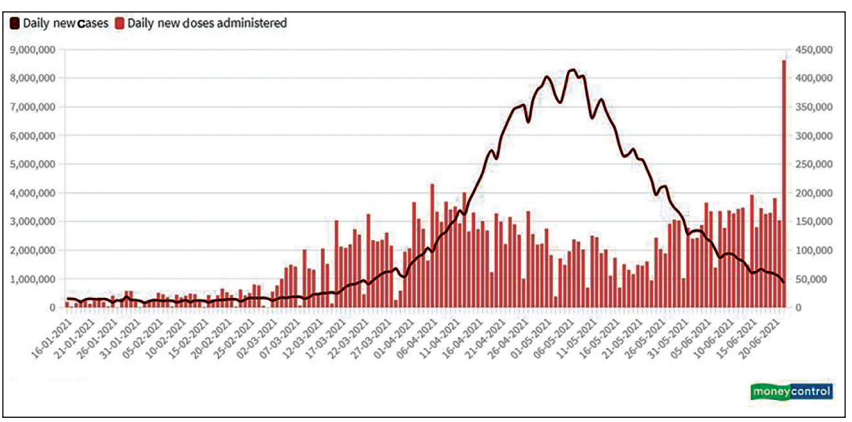


Figure 1. COVID-19 Daily New Cases and Vaccine Doses Administered.

Source: MoHFW (2021).

self-checkout systems and home delivery options, so as to gain at least a share of what was lost to the big e-commerce players.

Methods of Data Collection

In order to proceed with the objectives set up for this study, and given the nature of the research, it was clear that secondary data was going to be limited. Hence, it was decided that primary data would be collected from the citizens in an unbiased manner via the questionnaire method of data collection. The widely used Google Forms was used to make the questionnaire. The questionnaire used in the present study consists of both open-ended and closed-ended questions, and both of these were used to aid the current research. An open-ended question has no predefined responses and focuses on gathering the information from a respondent with no limitations, barring the word limit. A closed-ended question has predefined options for answers and will almost always have an element of choice (Worley, 2015).

The questionnaire titled 'COVID-19 Impact on the E-commerce Sector' consisted of five sections, as follows:

1. Basic information
2. Pre-COVID period analysis (October–December 2019)
3. COVID wave 1 period analysis (August–October 2020)
4. COVID wave 2 period analysis (February–April 2021)
5. Thoughts on the pandemic and e-commerce

Basic information: This section of the questionnaire consisted of questions aimed at attaining basic identity-related information about the respondent. Asking additional personal details such as names and contact information was avoided to ensure a sense of calm to the respondent whilst expressing their opinions freely. The study collected basic information such as the state of residence, gender, age group, education level and employment status, alongside essential details to fulfill the research goal. The respondents were asked to mention their level of familiarity and extent of usage of e-commerce shopping websites. In order to proceed with the analysis of COVID-19 in the e-commerce sector, it was deemed ideal to pick three uniform periods of three months, which represented the three stages of the spread of the virus in the nation.

The three periods were as follows: (a) pre-COVID: In late 2019, before COVID-19 had become a noticeable threat to the populace of the nation; (b) COVID wave 1: Three months were chosen from the end of 2020, wherein the national daily new COVID-19 positive cases peaked. Then, for a while at least, the number of cases started to reduce; and (c) COVID wave 2: Three months were chosen from the beginning of 2021, wherein the number of COVID-19 cases had reached an all-time high; it is referred to as the second wave of the pandemic with newer, more fatal strains of the virus. The study deliberately focused on these limited periods, as they capture the transition of e-commerce in India with the unfolding of an unprecedented health crisis. A separate study may also be

undertaken by future researchers in this area about the developments in e-commerce in the post-COVID era. However, this study confines itself to the initial stages of the COVID-19 pandemic to get maximum insights into the developments during this period.

The data was collected for similar variables for these three time periods from every respondent through the questionnaire to facilitate a comparative study. The selection of variables representing changes in the e-commerce market was based on an OECD policy response analysis to the coronavirus and expert discussion in various online news media (OECD, 2020).

The following questions were asked: (a) the number of times the respondent physically went to a store during the study period; (2) the number of online purchases made during the study period; (c) the number of online money transfers and transactions done during the study period; (d) the amount of money spent on online purchases during the study period; (e) the amount of money sent through online money transfers and transactions during the study period; (f) number of hours spent per day consuming content on over-the-top streaming platforms during the study period; and (g) the type of commodity focused on whilst shopping online (essential/non-essential).

Thoughts on the pandemic and e-commerce: In this section, questions were asked to the respondents to understand their viewpoints or what they interpreted as the effects of the pandemic on both e-commerce platforms and retail stores concerning their purchasing patterns. Many times, what a respondent felt about the issue may not necessarily be what the data collected from them revealed about the same. Finally, the respondents were allowed to express what they felt were the effects of the pandemic on the e-commerce sector and retail chains as they saw fit with an open-ended question.

The questionnaire was distributed amongst Indian citizens of all ages throughout the country, and data was received from the same, even in the lockdown mode within which this research was conducted solely due to the assistance of online resources such as Google Forms, Google Meet and other online messaging platforms.

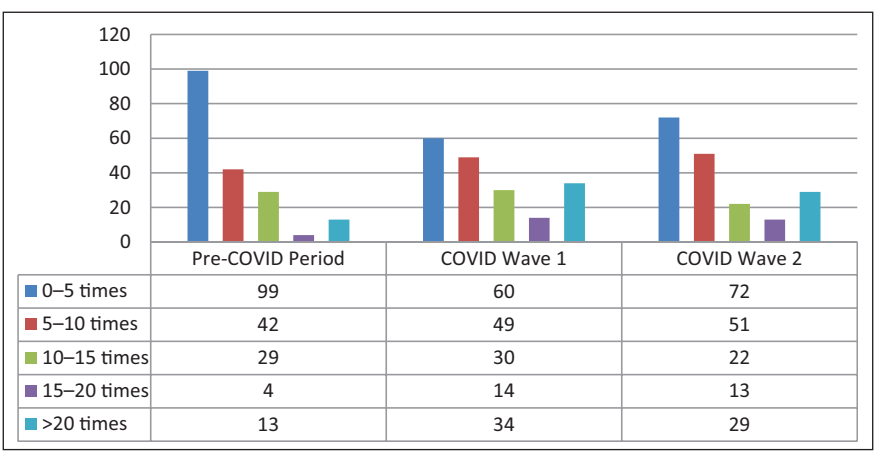
Data Analysis

The study used primary data collected from 192 respondents, representing almost every state of India, to get a broad perspective across the nation. The interpretation of the summarised data was made by considering each of the various variables taken into consideration with respect to both the first wave and the second wave of the pandemic and comparing them to the pre-COVID period considered for this study. It would be an interesting discussion to understand why certain variables changed as they did after the onslaught of the pandemic and to come up with meaningful policy implications. When evaluating the criteria for selection of appropriate periods depicting each wave of the pandemic, the period of three months was chosen as it was in September 2020 that the highest number of new cases were reported in India for the first wave of the pandemic (on 17 September 2020, 97,894 new cases were reported).

As the research was conducted in April 2021, February to April 2021 was taken as the period for the second wave, wherein the number of cases rapidly multiplied daily.

Some variables will be interpreted together as they represent the same end goal. The two variables considered were the number of online purchases made and the number of online money transactions and transfers made. According to the summarised data, both variables showed a sharp increase during the first wave of the pandemic, which was to be understood. As seen in Figure 2, the number of offline store visits declined sharply. Hence, people turned to alternative purchasing methods such as e-commerce shopping websites and corresponding e-commerce payment methods to purchase goods and services. Due to this, they recorded higher growth in revenue, too. Amazon's and Flipkart's incomes from operations increased by nearly 43% and 40% to ₹10,847.6 and ₹5,916.3 crore, respectively, by the end of April 2021 (Bureau, 2021). However, an interesting observation has been made: Although Amazon's and Flipkart's revenues increased, their losses also increased during the same period. This could be attributed to the increased transportation and storage costs and also compliance with the e-commerce laws set in place during the last months of 2018 by the DPIIT, which forced them out of using predatory pricing techniques which guaranteed profits in favour of retail stores and retail markets (Borkar, 2019).

Despite the higher costs incurred due to policy changes and the pandemic, there was increased revenue for e-commerce companies such as Amazon, Flipkart and others. This, in turn, increased the number of job opportunities in this segment and attracted foreign direct investment. Call centres were established in rural parts of the nation to facilitate online support for consumers, creating job opportunities and revenue for the rural population. Amazon decided to invest $630 million in its partners and subsidiaries in 2020 and is said to invest even more ($26 billions) by 2030 owing to the unscathed market scope in the nation (Pradeep, 2019; Reuters,



	Pre-COVID Period	COVID Wave 1	COVID Wave 2
0–5 times	99	60	72
5–10 times	42	49	51
10–15 times	29	30	22
15–20 times	4	14	13
>20 times	13	34	29

Figure 2. Approximate Number of Online Purchases Made by People in the Three Periods.

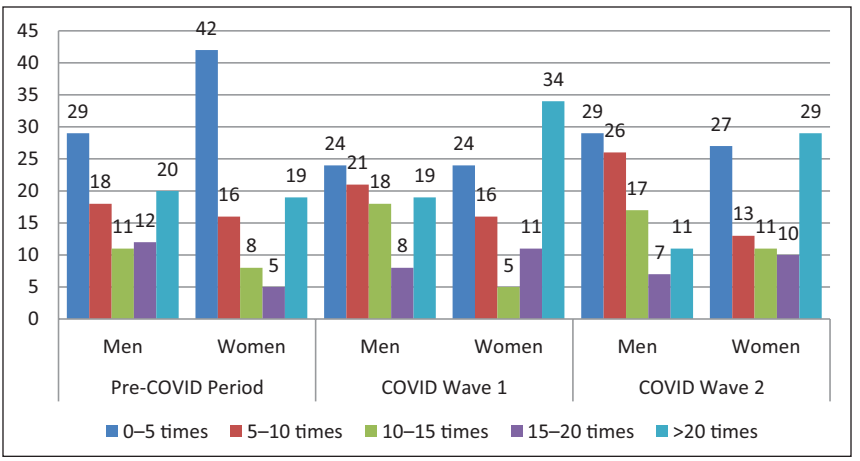
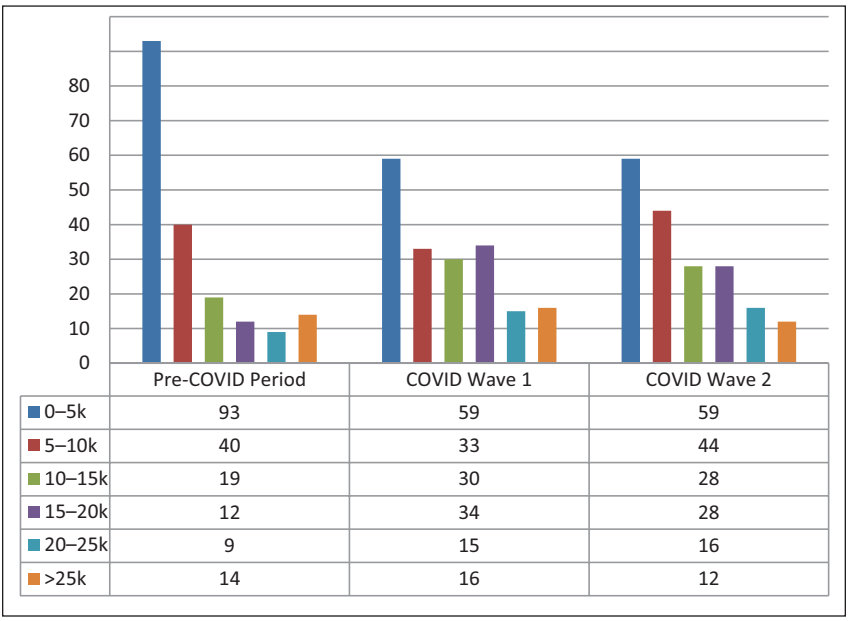


Figure 3. Approximate Number of Online Transactions Made by Men and Women in the Three Periods.

2023). This, in turn, also led to increased tax revenue for the government due to the excess revenue for the e-commerce platforms, and hence, the contribution of e-commerce platforms to the GDP also increased. Indian e-commerce market grew 40% in 2020, grossing $38 billion gross merchandise value (GMV), up from $27 billion in 2019 (Chengappa, 2020). In the long run, the increased revenues could possibly lead to increased expenditure on research and development in the companies and hence to more consumer satisfaction and job opportunities. In addition to this, the fallout of increased usage of e-commerce and higher use of online payment methods such as net banking and UPI increased the amount of revenue earned by private and public banks. This is because, for each UPI money transfer above ₹1,000, most banks charge the user ₹5, and for each net banking money transfer, the banks charge ₹2 plus goods and services tax (GST) (Paisa Bazaar, 2021). The increase in revenue led to an increase in liquid funds in the banks to some extent and, hence, an increase in the loanable funds, which were very much needed for the slowing economy.

As shown in figure 3, the first wave of the COVID-19 pandemic saw a surge in online purchases and money transfers through e-commerce platforms, with a subsequent reduction during the second wave. Despite this decline, the levels remained significantly higher than the pre-COVID period. Retail store owners, adapting to the changed circumstances, innovated by implementing home delivery services after facing losses in the first wave. This shift attracted customers who preferred quicker local deliveries over traditional e-commerce platforms, diminishing their dominance during the second wave.

The pandemic's impact on online purchasing and money transfers is compared across genders. Post-pandemic, more men visited retail stores, while women surpassed men in online purchases and money transfers. A CNBC survey revealed women preferred e-commerce, while men favoured brick-and-mortar stores (Thomas, 2018). Pre-COVID, India used e-commerce mainly for non-essential



	Pre-COVID Period	COVID Wave 1	COVID Wave 2
0–5k	93	59	59
5–10k	40	33	44
10–15k	19	30	28
15–20k	12	34	28
20–25k	9	15	16
>25k	14	16	12

Figure 4. Approximate Amount of Money Spent by People on Online Purchases in the Three Periods.

items. Post-pandemic, despite a shift to online shopping for essentials, men tended to stick to offline stores, while women continued purchasing non-essentials online.

The second and third variables taken into consideration can also be clubbed together. The researchers will not go into the depths of interpreting the summaries of these variables, as they imply the same conclusion as the above two variables. They are the amount of money spent on online shopping and the amount of money transferred via e-commerce payment platforms.

Figure 4 illustrates that the average Indian citizen spent more on online purchases via e-commerce websites during the first wave of the pandemic compared to the pre-COVID period. While the number of online purchases slightly declined, spending during the second wave decreased but remained higher than pre-pandemic levels. This trend is consistent with the amount of money transferred online, which significantly increased during the first wave but reduced the gap during the second wave.

These developments, in turn, resulted in an increase in the speed and efficiency of deliveries, which led to a relative rise in the demand for goods from retail sources. This could be the possible reason behind the decline in the amount of money transferred and spent online for commodities. However, one could not conclude that people went back to relying on offline stores again, as the amount of money spent on online shopping was still far higher than that of the pre-COVID period. People have gotten and are now used to using online shopping and online payment methods and the convenience associated with them, and this will not be

lost anytime soon. Even online food delivery applications such as Swiggy and Zomato saw huge revenue increases due to the adoption of this new delivery service. In FY20, Swiggy had a total revenue of ₹2,776 crores, whilst in FY19, its total revenue was ₹1,292 crores. This means that there was a 115% increase in revenue (Abrar, 2021).

Similarly, Zomato's total revenue for FY20 was sapped at ₹2,486 crores, whilst their revenue stood at ₹1,255 crores in FY19 (Peermohamed, 2021). Hence, Zomato saw an increase in revenue of 98%. This massive jump in revenue was due to people's dependence on food and home delivery applications supported by e-commerce in order to obtain even the most essential of commodities, such as food.

From an economic standpoint, the changes in the variables in question offer interesting insights. As people started using e-commerce platforms extensively, a part of their income was devoted to the same. As the prices of goods are generally lower online compared to retail stores, people purchasing online are left with more savings than earlier. This unexpected increase in savings leads to a further increase in aggregate demand for goods, which is, in fact, essential for economic recovery.

This study also made an attempt to understand online purchasing trends from a gender perspective. In the pre-COVID period, the amount of money spent by men on online transfers and transactions using e-commerce payment services was far higher than that spent on the same vis-a-vis women. After the first wave of the pandemic struck, a sharp increase in the amount of money spent by women on e-commerce payment platforms like UPI was witnessed; it even slightly surpassed that by men. Surprisingly, this trend continued even during the second wave of the pandemic, which is depicted in Figure 5.

The time spent on OTT platforms is another key variable considered by the present study. OTT platforms or over-the-top streaming platforms witnessed a considerable rise in India even before the pandemic struck due to the increased

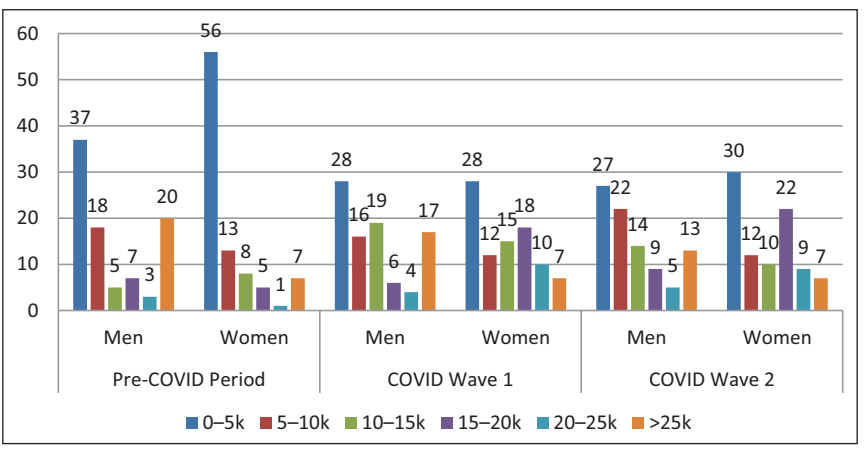
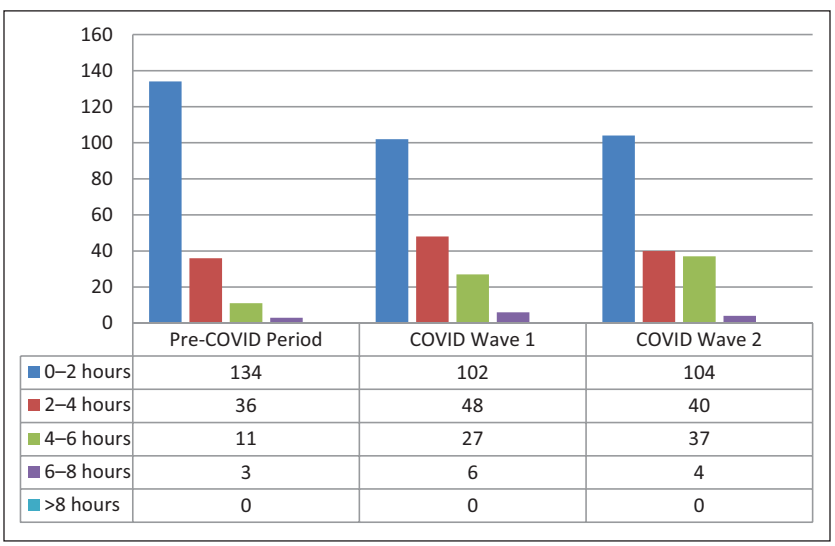


Figure 5. Approximate Amount of Money Transferred Online by Men and Women in the Three Periods.

awareness and the realisation by the public about the comfort of watching favourite films and soap operas at home, besides avoiding travel costs, ticket charges and exorbitant theatre food prices. But after the pandemic struck, OTT platforms such as Netflix, Amazon Prime Video, Sony LIV and Voot saw an unprecedented acceleration in their growth.

When the data on the number of hours spent daily on OTT platforms was summarised, it can be observed from Figure 6 that Indians spent little to no time on OTT platforms in the pre-COVID period, even though more than half the population was familiar with the same. But when the pandemic struck, the time spent by users daily increased very significantly, with most citizens preferring to watch anywhere between 1 and 4 hours of content a day. This trend continued on to the second wave as the number of people who watched 4–6 hours of OTT content a day increased sharply to match the number of people who watched for 2–4 hours.

When the data was divided based on gender to identify the difference in the impact of the pandemic on OTT services for each gender, the following inferences were obtained from the summarised data. In the pre-COVID period, as seen in Figure 7, the usage of OTT services was very low; even though people were familiar with the content, they were unwilling to pay as they did not find it necessary. In this period, men and women used OTT services to the same extent. When the first wave of the pandemic struck, the overall time spent on OTT services skyrocketed, but women seemed to have led the charge (refer to figure 8). The number of women who watched more than 2–6 hours of content a day vastly outweighed the number of men who did the same. The same trend continued in the second wave as women consumed way more OTT content than men (refer to figure 9). A possible reason could be explained using the other variables'



	Pre-COVID Period	COVID Wave 1	COVID Wave 2
0–2 hours	134	102	104
2–4 hours	36	48	40
4–6 hours	11	27	37
6–8 hours	3	6	4
>8 hours	0	0	0

Figure 6. Average Number of Hours Spent per Day on OTT Platforms.

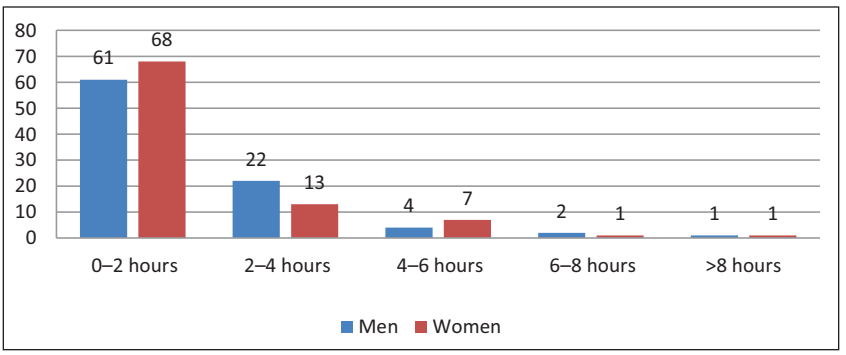


Figure 7. Average Number of Hours Spent per Day by Men and Women on OTT Platforms in the Pre-COVID Period.

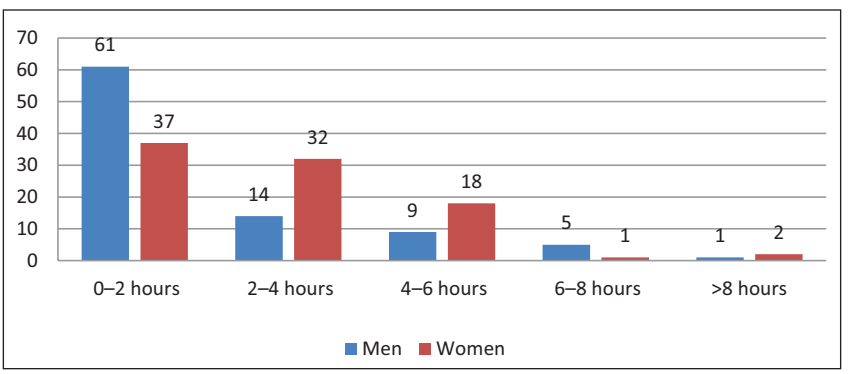


Figure 8. Average Number of Hours Spent per Day by Men and Women on OTT Platforms in the COVID Wave 1 Period.

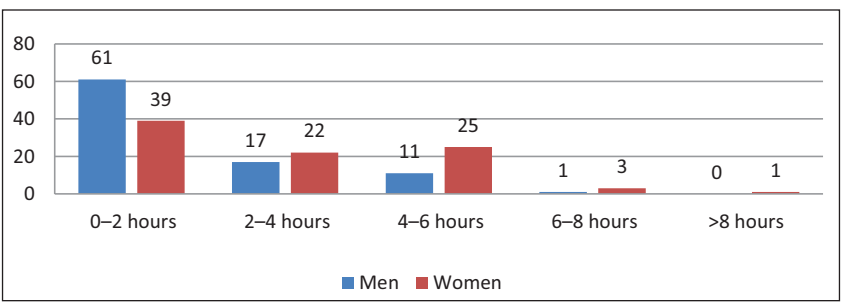


Figure 9. Average Number of Hours Spent per Day by Men and Women on OTT Platforms in the COVID Wave 2 Period.

inferences. As seen in Figure 5, men chose to visit offline stores throughout the pandemic, and women preferred to resort to e-commerce shopping websites for their purchases and preferred the transfer of money online compared to men who still chose offline methods. This insinuates that women were more connected to

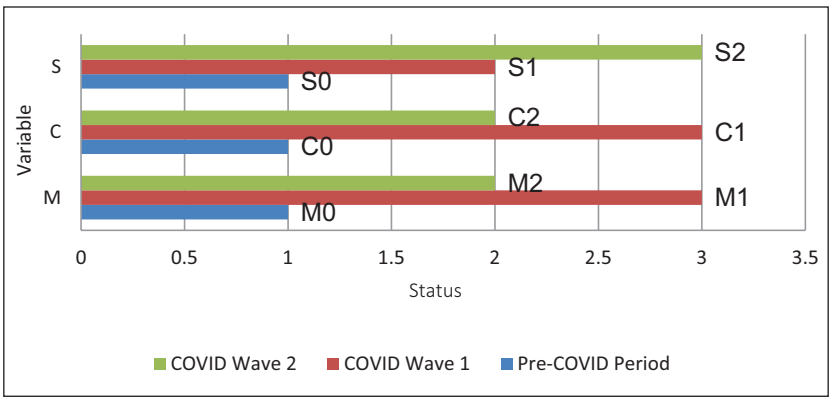


Figure 10. Impact of COVID-19 Pandemic on the E-commerce Market.

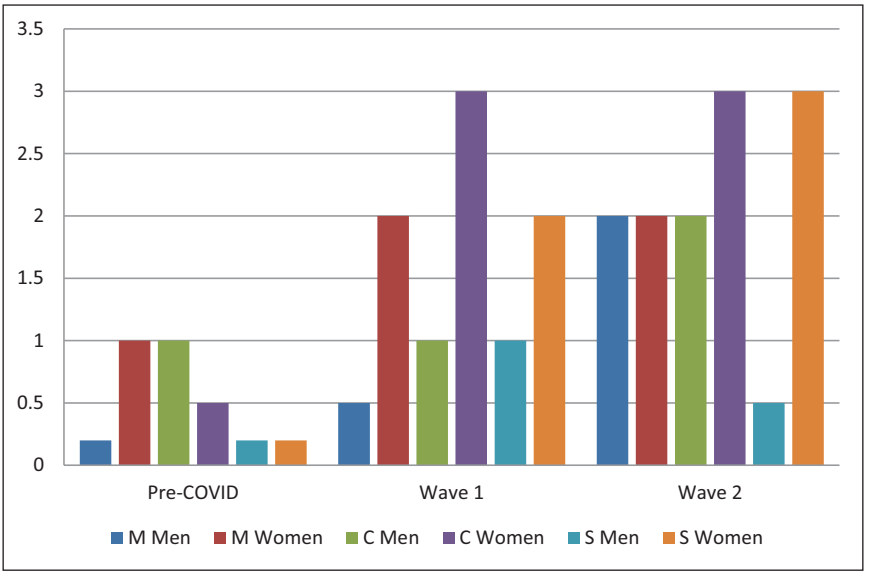


Figure 11. Difference in the Impact of COVID-19 Pandemic on the E-commerce Market for Men and Women.

digital media and technology than men during the pandemic, and this may have led them to being more open to the concept of substituting offline media sources with online OTT platforms for all media consumption needs.

Another possible reason may be that OTT platforms accept payment only through e-commerce money transfer services. Women prefer to use them over physical transfers anyway; women may have purchased the subscription and consumed more content on OTT whilst the men of the house may not have bought and hence watched alongside the women for less amount of time.

All in all, it is a fact that the OTT video streaming market in India was booming and had reached a growth rate of 28.6% CAGR (BrandMedia, 2021) during the first wave and seemed to have increased even further, leading to more investment by OTT companies in India, resulting in a rise in job opportunities and hence increase in the nation's per capita income.

Let the variables be denoted as follows: (a) income spent on and number of online purchases (M), (b) income spent on and number of online cash transactions (C), and (c) average number of hours per day or time spent on OTT streaming services (S). The time period of the research was divided into three parts to facilitate comparison and ease of pointing out the contrast: (a) pre-COVID period (0), (b) COVID wave 1 period (1), and (c) COVID wave 2 period (2).

It was found that the penetration of e-commerce platforms before the pandemic struck was quite low compared to the pandemic period, so the values of the online purchase variable (M0), online transaction variable (C0) and OTT streaming variable (S0) are kept as 'low = 1'. This is the base point.

As illustrated in figure 10, when the first wave of the pandemic hit, there was a rise in online purchases (M1 = 'Highest = 3'), online cash transactions (C1 = 'Highest = 3') and the amount of time spent consuming content on over-the-top streaming platforms (S1 = 'Higher = 2'). When the second wave hit, there was a decrease in online purchases (M2 = 'Higher = 2') and online cash transactions (C2 = 'Higher = 2'). It was still way higher than in the pre-COVID period, but the e-commerce services that used the B2C, C2B and C2C models saw a slight decline in both demand and revenue. Conversely, peoples' familiarity with OTT streaming platforms such as Netflix and Amazon Prime Video increased, and hence, the time spent on OTT platforms (S2 = 'Highest = 3') was even higher than at the time of the first wave.

It was found that the penetration of e-commerce platforms before the pandemic struck was quite low compared to the pandemic period in both sexes, online purchases (M) for women and online transactions (C) for men (refer to figure 11). From the graph, it is visible that women seem to have spearheaded the mass adoption of e-commerce platforms during the first wave, as compared to men, who used them more in the pre-COVID period. When the second wave hit, women were still ahead of men when it came to the adoption of e-commerce platforms, but the difference between them decreased.

From Tables 1–4, it is clear that the e-commerce platforms penetrated deeper into Indian society during the COVID-19 period, when compared to the period before the pandemic stuck. This does not appear to be a short-term phenomenon. It is a fact that the usage of e-commerce platforms could possibly reduce in the post-pandemic era. However, it may not get back to the pre-pandemic levels, given the ease, comfort and sense of empowerment it brings along with it. Thus, it is time policymakers and the business class recognise this digital transformation that Indian society is going through. While the policymakers need to focus on reducing the complexities and policy uncertainties related to e-commerce, they also need to encourage

Table 1. Summary of the Data from the Three Variables in the Three Time Periods.

	Status		
Variable	Pre-COVID	COVID Wave 1	COVID Wave 2
M	Low	Highest	Higher
C	Low	Highest	Higher
S	Low	Higher	Highest

Note: M: Income spent on and number of online purchases; C: Income spent on and number of online cash transactions; S: Average number of hours per day or time spent on over-the-top streaming services.

Table 2. Each Variable's Status Linked to a Ranked Numerical Value for Graphical Representation.

Low = 1	Higher = 2	Highest = 3

Note: This table shows the numerical values/ranks that were assigned to each status of the three variables in each time period considered for the research to ease the process of graphical depiction. As assigned, when a variable's status is low in a time period, its numerical value/rank is 1 and hence is the lowest as compared to higher or highest.

Table 3. Each Variable's Status Linked to a Ranked Numerical Value for Each Gender Separately for Graphical Representation.

Low = 0.2	Middle = 0.5	High = 1	Higher = 2	Highest =3

Note: This table shows the numerical values or ranks that were assigned to each status of the three variables separately for men and women in each time period considered for the research to ease the process of graphical depiction. As assigned, when a variable's status is low in a time period, its numerical value/rank is 0.2 and hence is the lowest as compared to middle or high.

Table 4. Summary of the Data from the Three Variables Separately for Each Gender in the Three Time Periods.

Variable	M		C			S		
Period\ Gender	Men	Women	Men		Women		Men		Women
Pre-COVID period	Low	High	High		Middle	Low	Low	Low	COVID wave 1
Middle	Higher	High		Highest		High		Higher	COVID wave 2
Higher	Higher	Higher		Highest		Middle		Highest	

Note: M: Income spent on and number of online purchases; C: Income spent on and number of online cash transactions; S: Average number of hours per day or time spent on over-the-top streaming services.

innovations in this segment in the time to come. On the other hand, businesses need to adapt to this change and design sales strategies, keeping the growing synergies between online and offline transactions in a billion-plus populated Indian market.

Conclusions

This study investigated the impact of the COVID-19 pandemic on the e-commerce market, focusing on consumer behaviour with respect to gender. The analysis includes online shopping sites (B2C model), online payment platforms (B2C and C2B models) and OTT streaming platforms (D2C model). A descriptive study utilising a graphical-tabular analysis reveals a significant surge in e-commerce services during the first pandemic wave, with all three types experiencing exponential growth. While the second wave saw a slight reduction in online shopping and payment platform usage, it still exceeded pre-pandemic levels. Conversely, OTT streaming platforms continued to grow during the second wave. Gender-specific analysis indicates that women predominantly drove the initial shift towards e-commerce during the first wave, but men caught up during the second wave. Overall, the pandemic acted as a catalyst for the growth of the e-commerce market in India, and the resulting changes in consumer behaviour are likely to endure.

Managerial Implications

In this context it is pertinent to understand that this paradigm shift may not be reversed easily in the time to come, even after the pandemic ends. This change in the buying behaviour of the consumer and their preferences provides key insights for the marketers, and it is time for them to go back to the drawing table and re-design their old strategies of targeting the customers. Earlier, the brands used to drive the consumption, but now it has been reversed, with the consumers making or breaking the brands, thanks to the Internet and the sea of information available on the social media sites about almost every product or service that is being offered. This consumer empowerment would have a serious impact on the way the goods and services are bought and sold in the time to come. On the other hand, it is pertinent for the policymakers to understand and acknowledge this change and design policies in such a way that they facilitate the growth of e-ecommerce, while protecting the interests of the retailers, which is, indeed, a tough balancing task.

Acknowledgement

The authors are grateful to the anonymous referees of the journal for their extremely useful suggestions to improve the quality of the article.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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Original Article

Post-amalgamation Performance Review of Six Public Sector Banks in India

IMIB Journal of Innovation and Management
4(1) 93–107, 2026

DOI: 10.1177/jinm.241245800
jim.imibh.edu.in

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Abstract

Consolidation of public sector banks (PSBs) is a part of reorganisation efforts with an aim to improve their profitability, solvency and efficiency. Of late merger of five subsidiaries of State Bank of India and Bharatiya Mahila Bank Ltd with it in April 2017 has kindled interest in restructuring of unprofitable banks by merging them with a profitable one. In August 2019, the Government of India announced amalgamation of 10 PSBs constituting them into four entities under Punjab National Bank, Canara Bank, Union Bank of India and Indian Bank. Earlier in April 2019, another merger had taken place following the integration of Dena Bank and Vijaya Bank with Bank of Baroda. Studies reveal that while in European countries bank mergers led to improved efficiency, in Asian countries like Indonesia recapitalisation and diversification of banks improved their profitability. In a study of Nigerian banks in Africa it is revealed that post-merger, employee morale diminishes due to stress and anxiety arising out of possible job loss and possible challenges to be met in the new environment. In the present study, the authors have tried to ascertain how profitability, solvency and efficiency of banks improved post-amalgamation in six PSBs. The outcome of the result is a mixed one, while some banks improved their profitability and solvency parameters, for others it is not so perceptible. However, efficiency indicators do not have any significant result for all six of them after amalgamation.

Keywords

Return on assets, return on equity, earnings per share, capital adequacy ratio, net interest margin, operating cost, working fund, net profit

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Introduction

Critics have questioned the continuance of public sector banks (PSBs) in India following slowdown in the economy and rising bad loans post-Global Financial Crisis during 2008–2009. Merger of PSBs or their privatisation was deemed to be a quick fix for arresting decline of banks and sustaining credit growth in the economy. In the wake of liberalisation in 1991, with PSBs controlling 90% of the market share, the Narasimham Committee recommended a three-tier banking structure with 3 or 4 large banks having international presence, about 8–10 national banks and several regional banks. After financial liberalisation in India in 1990s, there have been 32 bank mergers, involving private sector banks. There is only one instance of the merging of two nationalised banks in 1993, when New Bank of India merged with Punjab National Bank (PNB) following incurring net loss due to bad debt provisioning. Following merger, PNB sustained a net loss of Rs 96 crore in 1996, and took five years and more to get over the merger effect by a profit-making PSB. Thus, merger of PSBs is not an unmixed blessing (Krishnamurthy, 2017, pp. 12–15). While pre-Nationalisation of 14 major Private Sector Commercial Banks in 1969, small non-viable banks co-existed with other viable banks, the Government of India enacted necessary legislation in 1960 to empower Reserve Bank of India (RBI) for facilitating compulsory bank mergers and integrations of weak banks into stronger entities. During 1961, there were 30 compulsory mergers, while in 1964, 62 banks were integrated. Reorganisation of banks is done in India through merger and acquisition modalities (Devi, 2015, p. 52).

The merger of five Associate Banks (ABs) with State Bank of India (SBI) in April 2017 was a path-breaking act heralding large-scale bank mergers in subsequent years. The Government of India accorded sanction on 22 February and 20 March 2017 under SBI Act, 1955 to acquire five subsidiaries of SBI, namely State Bank of Bikaner and Jaipur, State Bank of Mysore, State Bank of Travancore, State Bank of Patiala, State Bank of Hyderabad and Bharatiya Mahila Bank Ltd. Out of five ABs, three were stock-listed with SBI owning larger equity holdings. The remaining two were wholly owned by SBI. The acquisition came into effect from 1 April 2017. As per 'The Banker' report dated July 2017, after the merger, SBI attained the rank of 54 among the top 1,000 global banks (State Bank of India, 2016–2017, p. 163). Post-merger the business mix of SBI would be ₹36.15 lakh crores[1] with a market share of 22.09% in India.

The next merger of banks took place from 1 April 2019 following integration of Dena Bank and Vijaya Bank with Bank of Baroda (BOB). While both BOB and Vijaya Bank were strong banks, Dena Bank incurred losses. BOB had a large network of overseas branches, Vijaya Bank had a strong presence in South India and Dena Bank a large retail base. The combined business of BOB would become ₹14.82 lakh crores from earlier ₹10.30 lakh crore after the merger. It would be the largest commercial bank after SBI and ICICI Bank. After the merger, BOB with 9,475 branches, 13,544 ATMs and 85,657 employees would serve 12 crore customers (Bank of Baroda, 2018–2019, p. 42). The equity share transfer ratio was decided at 110:1,000 for every BOB share to that of Dena Bank. Similarly,

the equity share transfer ratio was decided at 402:1,000 for every BOB share to that of Vijaya Bank.

On 30 August 2019, the finance minister Mrs Nirmala Sitharaman announced bank consolidation programme of PSBs, when 10 banks were amalgamated into 4 entities reducing total PSBs in India into 12 from earlier 27. Amalgamation of Punjab National Bank (PNB) with United Bank of India (UBI) and Oriental Bank of Commerce (OBC) was notified by the Government of India in the official Gazette on 4 March 2020. The merger process has been a part of Government's larger vision of making the Indian banking sector relatively stronger and globally competitive. The amalgamation of three banks came into force with effect from 1 April 2020 (Punjab National Bank, 2019–2020, p. 189). The amalgamated PNB will have a wider geographical reach through 11,000 plus branches, more than 13,000 ATMs, 1 lakh employees and business mix of ₹18 lakh crores. The equity share transfer ratio was decided at 121:1000 for every PNB share to that of UBI. Further, the equity share transfer ratio was decided at 1150:1000 for every PNB share to that of OBC.

Post-amalgamation, Canara Bank would become the fourth largest PSB in the country with a total bank branch network of 10,324 and an asset base of USD 210 billion. The merger of Syndicate Bank with Canara Bank came into force w.e.f. 1 April 2020. The equity share transfer ratio was decided at 158:1000 for every Canara Bank share to that of Syndicate Bank. The merger protected the service conditions of all regular employees and officers of the merged bank as well as its pensioners. Post-merger, the business mix would be ₹10.57 lakh crores (Canara Bank, 2019–2020, p. 13).

The Government of India communicated on 30 August 2019 an alternative mechanism (AM) after consultation with the RBI regarding amalgamation of Allahabad Bank—a bank with 155 years legacy—with Indian Bank. Amalgamation of Allahabad Bank into Indian Bank made it the seventh largest PSB with ₹8 lakh crores business and 6,000 branch networks. The merger operation commenced from 1 April 2020 (Indian Bank, 2019–2020, p. 7). The equity share transfer ratio was decided at 115:1,000 for every Allahabad Bank share to that of Indian Bank.

Andhra Bank and Corporation Bank have been amalgamated into UBI w.e.f. 1 April 2020 vide gazette notification dated 4 March 2020. Post-merger, UBI would become a large bank with more than 9,500 branches, 13,300 plus ATMs, an employee strength of over 75,000 and over 120 million customers. The business mix post-amalgamated UBI would be ₹7.70 lakh crores (Union Bank of India, 2019–2020, p. 202). The equity share transfer ratio was decided at 325:1,000 for every UBI share to that of Andhra Bank. Similarly, the equity share transfer ratio was decided at 330:1,000 for every Corporation Bank share to that of UBI.

Review of Literature

Following Central Bank of Nigeria directive for improving operational inadequacies in risk management and inefficiency in credit and money market operations, 'Merger and Acquisitions' continued in the Nigeria in 2011. Greater market share, diversification of business, supply chain expansion, acquisition of

talent and expertise, competitive advantage and resource re-allocation are some of the factors for which bank mergers are sought. However, merger and acquisitions led to attitudinal and productivity issues and employee turnover. Post-merger employee morale diminishes due to stress and anxiety arising out of possible job loss and possible challenges to be met in the new environment. However, the concept of productivity in a service industry like bank is quite different from that of manufacturing sector. Irrespective of measuring difficulties of productivity in service industries, studies have been made based on parameters like per employee deposit business, income, expenditure, net profit, spread and burden (Lukman, 2020, pp. 35–46).

Consolidation of banks are driven by a variety of objectives such as maximising shareholder value by increasing their efficiency, assuming economies of scale and additional market share is gained. Gains can occur through market diversification which may reduce cost and increase earnings on equity. Banks after merger can become what is called 'too big to fall' or Systemic Important Banks, when government can bail out banks in case of any distressed financial situation, thereby increasing shareholder value. However, merger may also occur due to promoters' desire for empire building and improved compensation package to top executives out of higher institutional profits. Further, consolidation of banks can take place due to environmental factors such as policy deregulation, technological change, globalisation, or bankruptcy of the banking system. Financial distress or bankruptcy has been an important driving consideration for merger of weaker banks with a strong bank. This was the main reason of merger of banks during East Asian Crisis of 1997–1998 (Mohan, 2005, p. 1152).

In Europe and North America, costs as a proportion of gross income decrease as size increases, reach their lowest with an asset size of $20 to $50 billion and start rising after assets rise beyond $50 billion. However, their return on equity (ROE) rises if assets are more than $50 billion. On the other hand, in Japan banks with asset base of more than $50 billion have the lowest cost to income ratio. Thus, if efficiency using operating cost as yardstick is used, a 'U' shaped relationship is in evidence, but if ROE is a measure, no such relationship is visible. ROE is not influenced by operating costs but also by non-interest income. In a way, consolidation in banks can increase efficiency gains more due to diversification rather than increased size. This has happened in America and Australia, where cost efficiency did not improve following merger of banks. Efficiency benefits of merger should be weighed against adverse impact on competition and restrictive trade practices. Moreover, bank mergers need be market driven instead of government induced, so that one can measure pre- and post-merger effects in banks (Mohan, 2005, pp. 1155–1161).

In a study relating to bank mergers in Indonesia, it was noticed that recapitalisation and diversification of income are positively corelated to bank profitability, while size and overhead costs are inversely related to earnings from profits. Recapitalisation, foreclosures, mergers and acquisitions as well as privatisation of the state-controlled banks were undertaken post-East Asian Financial Crisis in 1997 in Indonesia. While high interest rate led to lower bank profitability, inflation had a positive effect on bank performances. Foreign banks report higher profit margins than domestic banks in developing countries while

the reverse is true of developed countries. For any bank, return on assets (ROA) depend on bank's internal policy measures and external factors like government's fiscal policy and trade cycles in the economy. ROE on the other hand measures efficacy of management's own policies to get the best return from shareholder's fund through optimum utilisation (Habibullah, 2010, pp. 245–262).

During 1998 to 2004, rapid merger and acquisition of domestic and overseas banks in Europe took place. Improvement in costs, ROA and ROE of banks measured effectiveness of internal policies pursued in different countries of Europe. Domestic mergers were more numerous than cross-border activities in Europe. It was found that cross-border merged banks reported better results than domestic banks (Lozano-Vivas, n.d., p. 247). Resti (1998) used Data Envelopment Analysis analysing 67 bank mergers in Italy and concluded that merged banks improved efficiency in the post-merger period. It was seen, when banks of unequal size merge, their efficiency improved (Vander Vennet, 1996). Cuesta and Orea (2002) using 'stochastic output distance function' found that non-merged banks were better than merged ones on an average during 1985–1998 in Spanish savings banks. In a study of German cooperative banks between 1989 and 1997, found little evidence of efficiency gains among 283 bank mergers (Lozano-Vivas, n.d., pp. 248–249).

Competition, consolidation and restructuring the banks are major policy initiatives of RBI to ensure financial stability in the country. With a few exceptions, there is no significant post-merger improvement noticed in India. The author noticed three types of mergers such as horizontal, vertical and conglomerate under different market conditions. If two or more companies compete in the same market and geographic segment, it is called as horizontal. Vertical merger takes place at different stages of production and distribution between two companies. Firms engaged in unrelated lines of business activities resort to conglomerate mergers. Profile, logic, evaluation methodology and integration of merging entities depend on type of merger (Devi, 2015, pp. 50–51).

Non-performing assets (NPA) are one of the most formidable obstacles of economic growth, that permeated the banking industry in India. It has been noticed by researchers that aggressive loan growth rate contributes to large NPAs in future. The effectiveness of a bank can be measured by its operating, profitability and liquidity ratios. While high gross NPAs (GNPAs) indicate poor asset quality, high net NPA indicate overall health of a bank. There is a close association between GNPA and liquidity ratios. The impact of the GNPA ratio on capital adequacy ratio (CAR) has a bearing. Poor operating efficiency lowers capital base and reduced profits decrease asset quality of banks (Sharma et al., 2023, p. 180).

Objective of Study

In this article, functional parameters of different banks such as ROAs, CAR, net interest margin (NIM), operating profit to working fund (OP/WF), ROE, net profit and earnings per share (EPS) following amalgamation of six major PSBs are studied. This will help assessing overall success of amalgamation efforts by the Government of India to strengthen the banking system, and growth of the economy.

Theoretical Framework

Although merger of banks is not new in India, the prospect of large-scale amalgamation of PSBs is path breaking in the sense that there was only one instance of a nationalised bank (New Bank of India) merged with PNB in 1993 and two other subsidiaries of SBI merged with the parent bank in 2008 and 2010. The current efforts of the Government are in line with Narasimham Committee recommendations of mergers and acquisitions to increase efficiency of banks. In this perspective, an empirical study is made to ascertain impact of the measure.

Research Methodology

Financial ratios such as 'profitability ratio', 'solvency ratio' and 'efficiency indicators' have been used to assess post-merger performance of six PSBs, where mergers took place during the relevant period (2017–2019).

Profitability Ratio

1. Return on Assets: ROA is determined by ratio of profit after tax to total assets.
2. Earnings per Share: EPS is calculated as a company's profit divided by the outstanding shares of its common stock.

Solvency Indicators

Capital Adequacy Ratio: CAR is measured by ratio of tier 1 and tier 2 capital to risk weighted assets during the review period.

Efficiency Indicators

The following measures can be used to rate operating efficiency of a bank.

1. NIM is indicated by difference between interest income and interest expenditure. It is an indicator of a bank's profitability and growth.
2. Operating Profit/Working Fund (OP/WF): This ratio indicates how a bank has employed its working funds in generating profit.
3. Net Profit: Profit after tax and provisions measures degree of efficiency of a company.

Analytical Framework

A comparative analysis of the post-merger and pre-merger performance of banks is made to assess the impact of bank mergers. For this reason, secondary financial data of SBI are collected for 10 years from April 2013 to March 2022, containing 5 years data during pre-amalgamation period and 5 years available data during

post-amalgamation period. In case of five other amalgamated banks, namely BOB, PNB, Canara Bank, UBI and Indian Bank, secondary operational data for six years during 2017 to 2022 are obtained during pre- and post-amalgamated periods. Profitability, solvency and efficiency are measuring indicators. The financial ratios before and after merger are compared for each bank. The statistical implications of pre- and post-amalgamation years are verified through a paired student's *t*-test.

The following hypotheses were tested to find out the veracity of the conclusion.

Hypotheses

H_0: Post-amalgamation, PSBs posted no significant improvement in their operating performance.

H_1: Post-amalgamation, PSBs posted significant improvement in their operating performance.

Discussions

Causes of Statistically Insignificant Ratios

Profitability Ratios

SBI: From Table 1, it is found that ROA and ROE of SBI indicate an average of 0.38% and 8.02% during the decade. But there is a negative correlation for ROA (−0.77) and ROE (−0.74) between pre- and post-merger periods, indicating post-merger profitability of SBI declined. The results are not significant post-merger of five subsidiaries of SBI and Rashtriya Mahila Bank Ltd (RMB) as probability values (*p* value) are .23 and .38, respectively. One of the factors leading to low profitability of SBI is higher provisioning due to NPA post-merger of subsidiary banks with it.

Bank of Baroda: ROA and ROE of BOB indicate an average return of 0.33% and 6.66% during the relevant period (2017–2022). There is a positive correlation for ROA and ROE between post- and pre-merger periods, indicating post-merger profitability of BOB improved. The results are significant post-merger of Vijaya Bank and Dena Bank with it as probability values (*p* value) are .043 and .024, respectively. Although profitability ratios improved as indicated by ROA and ROE, net profit declined post-merger, with additional NPA provision for Dena Bank, one of the banks merged with it. Subsequently, the trend was reversed in 2022.

Punjab National Bank: ROA and ROE of PNB indicate an average of 0.20% and 4.92%, respectively, during the time span (2017–2022). There is a positive correlation for ROA and ROE between post- and pre-merger periods. The probability test post-merger of UBI and OBC with PNB is significant in case of ROA (0.023) and for ROE (0.021). Although profitability ratios posted significant results, NIM and EPS did not show any significant result, following massive provisioning due to frauds.

Table 1. Annual Reports of State Bank of India (2013–2022), Bank of Baroda (2017–2022) and Punjab National Bank (2017–2022).

Bank	Description	ROA (%)	CAR (%)	NIM (%)	OP/WF (%)	ROE (%)	NP (Crore)	EPS (%)
SBI	Mean	0.38	13.33	3.07	1.58	8.02	16859.06	18.89
	Variance	0.07	0.28	0.01	0.008	31.80	1.65E+08	206.53
	Correlation	−0.77	0.46	−0.17	0.53	−0.74	−0.27	−0.58
	p value	.23	.07	.35	.002	.38	.22	.32
	Remarks	Not significant	Not significant	Not significant	Significant	Not significant	Not significant	Not significant
BOB	Mean	0.33	15.41	2.87	1.69	6.66	4050.64	7.92
	Variance	0.14	0.36	0.05	0.018	53.25	20,757,929	75.39
	Correlation	1	1	1	1	1	1	1
	p value	0.04	0.02	0.016	0.019	0.02	0.10	0.001
	Remarks	Significant	Significant	Significant	Significant	Significant	Not significant	Significant
PNB	Mean	0.20	14.41	2.79	1.64	4.92	2739.50	2.62
	Variance	0.006	0.016	0.014	0.016	2.163	1,029,613	0.583
	Correlation	1	1	−1	−1	1	1	1
	p value	.023	.011	.124	.314	.021	.010	.079
	Remarks	Significant	Significant	Not significant	Not significant	Significant	Significant	Not significant

Source: State Bank of India (2013–2022), Bank of Baroda (2017–2022), Punjab National Bank (2017–2022).

Note: Calculations are authors' own.

Canara Bank: ROA and ROE of Canara Bank indicate an average of 0.38% and 9.76% during 2017–2022. But there is a positive correlation for ROA and ROE between post- and pre-merger periods, indicating post-merger profitability of Canara Bank improved. The probability results are not significant post-merger of Syndicate Bank with it, as probability values (*p* value) are .11 and .10, respectively, for ROA and ROE. Although net profit rose significantly post-merger, corresponding ratios for ROA and ROE are not significant, due to reporting of net-loss during pre-merger period following additional NPA provisioning.

Union Bank of India: ROA and ROE of UBI indicate an average of 0.37% and 8.39% during 2017–2022. But there is a positive correlation for ROA and ROE between post- and pre-merger periods, indicating higher post-merger profitability of UBI. The probability results are significant post-merger of Andhra Bank and Corporation Bank with UBI as probability value (*p* value) is .03 and .04, respectively, for ROA and ROE. UBI profitability ratios are significant but EPS is not significant due to reporting of net-loss during the pre-merger period (2018 and 2019).

Indian Bank: ROA and ROE of Indian Bank indicate an average ratio of 0.56% and 9.98% during 2017–2022. But there is a negative correlation for ROA and ROE between post- and pre-merger periods, indicating declining post-merger profitability of Indian Bank. The probability results are not significant post-merger of Allahabad Bank with Indian Bank as probability values (*p* value) are .26 and .20, respectively, for ROA and ROE. Although net profit improved post-merger, it did not post significant results due to declining profit level during the pre-merger period.

Solvency Ratio: CAR

SBI: From Table 1, it is found that CAR of SBI indicates average of 13.33% during 2013–2022. The correlation between pre- and post-merger periods is positive (0.46). The results are not significant post-merger of five subsidiaries of SBI and RMB Ltd with it as probability value (*p* value) is .07%. Although SBI standalone results were good, post-merger CAR did not rise due to increased risk of weighted assets of its subsidiaries. SBI can maintain minimum standards in CAR as per Basel specifications prescribed by RBI although profit earnings are not-significant.

Bank of Baroda: CAR of BOB indicates average of 15.41% during 2017–2022. The correlation is positive between post and pre-merger periods, indicating post-merger increase of capital to risk weighted asset ratio. The results are significant post-merger of Dena Bank and Vijaya Bank with it as probability value (*p* value) is .02% (Table 1).

Punjab National Bank: CAR of PNB indicates average of 14.41% during 2017–2022. The correlation is positive between post- and pre-merger periods, indicating post-merger increase of capital to risk weighted asset ratio. The results are significant post-merger of OBC and UBI with it as probability value (*p* value) is .01%. (Table 1). Government also infused capital under its 'Indradhanush' scheme to revamp PSBs.

Canara Bank: In Table 2, CAR of Canara Bank indicates average of 14.07% during 2017–2022. The correlation is positive between post- and pre-merger

Table 2. Annual Reports of Canara Bank (2017–2022), Union Bank of India (2017–2022) and Indian Bank (2017–2022).

Bank	Description	ROA (%)	CAR (%)	NIM (%)	OP/WF (%)	ROE (%)	NP (Crore)	EPS (%)
Canara Bank	Mean	0.38	14.07	2.78	1.78	9.76	4117.50	24.70
	Variance	0.028	1.602	0.002	0.009	18.666	4,870,321	121.368
	Correlation	1	1	1	1	1	1	1
	p value	.11	.25	.08	.22	.10	.03	.15
	Remarks	Not significant	Not significant	Not significant	Not significant	Not significant	Significant	Not significant
Union Bank of India	Mean	0.37	13.54	2.59	1.89	8.39	4,069	6.13
	Variance	0.02	1.92	0.02	0.01	5.88	2,705,138	5.08
	Correlation	1	1	1	−1	1	1	1
	p value	.03	.12	.018	.09	.04	.0005	.11
	Remarks	Significant	Not significant	Significant	Not significant	Significant	Significant	Not significant
Indian Bank	Mean	0.56	16.12	2.87	1.97	9.98	3,475	29.49
	Variance	0.0084	0.3362	0.0072	0.0072	0.8320	441,800	16.6464
	Correlation	−1	1	1	−1	−1	−1	−1
	p value	.26	.007	.14	.46	.20	.10	.24
	Remarks	Not significant	Significant	Not significant	Not significant	Not significant	Not significant	Not significant

Source: Canara Bank (2017–2022), Union Bank of India (2017–2022), Indian Bank (2017–2022).

Note: Calculations are authors' own.

periods, indicating post-merger increase of capital to risk weighted asset ratio. The results are not significant post-merger of Syndicate Bank with it as probability value (*p* value) is .25%. Canara Bank can maintain minimum CAR as prescribed by RBI under Basel standards. Government also infused equity to maintain prescribed minimum capital adequacy standards.

Union Bank of India: CAR of UBI indicates average of 13.54% during 2017–2022. The correlation is positive between post- and pre-merger periods, indicating post-merger increase of capital to risk weighted asset ratio. The results are not significant post-merger of Andhra Bank and Corporation Bank with it as probability value (*p* value) is .12%. UBI can maintain minimum CAR as prescribed by RBI under Basel standards (Table 2). Government did contribute equity capital to UBI pre-merger of banks to meet shortfalls in capital adequacy standards, if any.

Indian Bank: CAR of Indian Bank indicates average of 16.12% during post-merger period in comparison to pre-merger time span. The correlation is positive between post- and pre-merger periods, indicating post-merger increase of capital to risk weighted asset ratio. The results are significant post-merger of Allahabad Bank with it as probability value (*p* value) is .007%.

Efficiency Indicators: NIM, OP/WF and Net Profit

SBI: From Table 1, it is noticed that NIM, OP/WF, net profit of SBI indicate an average of 3.07%, 1.58% and 16,859.06 (crore), respectively, for the decade (2013–2022). There is a negative correlation for NIM (−0.17), positive correlation for OP/WF (0.53) and negative correlation for net profit (−0.27) between post- and pre-merger periods, indicating post-merger profitability of SBI declined although OP/WF ratio improved. The probability tests are not significant post-merger of five subsidiaries of SBI and RMB Ltd with it, as *p* value for NIM is .35 and for net profit is .22. However, *p* value for OP/WF is significant (.002) indicating better management of working funds. Higher provisioning of bad loans is a contributing factor for insignificant ratios in NIM and net profit post-merger of banks.

Bank of Baroda: In Table 1, NIM, OP/WF, net profit of BOB indicate an average of 2.87%, 1.69% and 4,050.64 (crore), respectively, during 2017–2022. There is a positive correlation for NIM, OP/WF and net profit between post- and pre-merger periods, indicating improved post-merger profitability of BOB. The probability tests are significant post-merger of Dena Bank and Vijaya Bank with it, as *p* value for NIM is .016 and OP/WF is 0.019. But *p* value for net profit is not significant (.10) indicating lower growth rate of net profit in the post-merger period. Additional provisioning for NPAs of Dena Bank is a reason for low profit growth.

Punjab National Bank: In Table 1, NIM, OP/WF and net profit of PNB indicate an average of 2.795%, 1.64% and 2739.50 (crore), respectively, during 2017–2022. But there is a negative correlation for NIM (−1), OP/WF (−1) but positive correlation for net profit (1) between post- and pre-merger periods, indicating declining interest spread, sub-optimal use of working fund although net profit improved during period under review. The probability tests are not significant

post-merger of OBC and UBI with it, as *p* value for NIM is .12 and OP/WF is .31. But the *p* value for net profit is significant (.01) indicating higher growth rate of net profit in the post-merger period, as PNB posted massive fraud loss provision during the pre-merger period.

Canara Bank: In Table 2, NIM, OP/WF and net profit of Canara Bank indicate an average of 2.78%, 1.78% and 4,117.5 (crore), respectively, during 2017–2022. There is a positive correlation for NIM, OP/WF and net profit between post- and pre-merger periods, indicating improved post-merger profitability of Canara Bank. The probability test results are not significant post-merger of Syndicate Bank with it, as *p* value for NIM is .08 and OP/WF is .22. Canara Bank reported net-loss during pre-merger period affecting its NIM and OP/WF ratios. However, *p* value for net profit is significant (.03) indicating higher growth rate of net profit in the post-merger period.

Union Bank of India: In Table 2, NIM, OP/WF and net profit of UBI indicate an average of 2.59%, 1.89% and 4,069 (crore), respectively, during 2017–2022. There is a positive correlation for NIM and net profit but negative correlation for OP/WF between post- and pre-merger periods, indicating improved post-merger profitability of UBI without optimal use of working fund to get an improved operating profit margin. The probability tests are significant post-merger of Andhra Bank and Corporation Bank with it, as *p* value for NIM is .018, net profit is .0005 and not significant for OP/WF is .09. It called for better deployment of resources by the bank.

Indian Bank: In Table 2, NIM, OP/WF, net profit of Indian Bank indicate an average of 2.87%, 1.97% and 3,475 (crore) during 2017–2022. There is a positive correlation for NIM (1) but negative correlation for OP/WF (−1) and net profit between post- and pre-merger periods, indicating declining post-merger profitability of Indian Bank despite improved NIM. The probability tests are not significant post-merger of Allahabad Bank with it, as *p* value for NIM is .14, net profit is .10 and for OP/WF, it is .46. This implies net profit is not adequate to match additional provisioning and other expenses.

From Table 3, it can be seen that the probability index of three banks for profitability is significant, while for three other banks, namely SBI, Canara and Indian Bank, it is not significant. The main reason of low profit is high NPA provisioning as can be seen from annual reports. SBI had a large operating profit of ₹75,292 crore in 2022. After NPA provision of ₹14,087 crore, net profit was reported for ₹31,676 crore. With an operating profit of ₹23,088 crore in 2022, Canara Bank made NPA provision of ₹12,772 crore for which net profit was reported at ₹5,678 crore. So also, Indian Bank reported an operating profit of ₹12,717 crore. After making NPA provision of ₹8,772 crore it had a net profit of ₹945 crore in 2022.

Similarly, solvency ratio post-merger is not significant in case of SBI, Canara Bank and UBI as they strived to maintain minimum capital adequacy norm of 12% under Basel III norms. SBI had an average CAR of 13.33% during post-merger time span. Canara Bank maintained it at 14.07%, while for Union Bank it was 13.54%.

As regards efficiency indicators, not all the six amalgamated banks showed uniform significant results post-merger, as reported in Table 3. Thus, the results are not conclusive under efficiency yardsticks. While three banks showed

Table 3. Summary of *p* Value.

Sl. No.	Parameter				
1	Profitability	ROA/*p* Value	ROE/*p* Value		Remarks
a.	SBI	.23	.38		NS
b.	BOB	.04	.02		S
c.	PNB	.02	.02		S
d.	Canara Bank	.11	.10		NS
e.	Union Bank of India	.03	.04		S
f.	Indian Bank	.26	.20		NS
2	Solvency	CAR/*p* Value			Remarks
a.	SBI	.07			NS
b.	BOB	.02			S
c.	PNB	.01			S
d.	Canara Bank	.25			NS
e.	Union Bank of India	.12			NS
f.	Indian Bank	.007			S
3	Efficiency Indicators	NIM/*p* Value	Net Profit/ *p* Value	OP/WF- *p* Value	
a.	SBI	.35	.22	.002	NS/NS/S
b.	BOB	.01	.10	.01	S/NS/S
c.	PNB	.12	.01	.31	NS/S/NS
d.	Canara Bank	.08	.03	.22	NS/S/NS
e.	Union Bank of India	.01	.0005	.09	S/S/NS
f.	Indian Bank	.14	.10	.46	NS

Source: Annual Reports of State Bank of India (2013−2022), Bank of Baroda (2017−2022), Punjab National Bank (2017−2022), Canara Bank (2017−2022), Union Bank of India (2017−2022) and Indian Bank (2017−2022).

Notes: Calculations are authors' own.

S: Significant; NS: Not Significant—Compiled from Tables 1 and 2.

significant results as far as profitability and solvency are concerned, none of the banks could achieve all the parameters in efficiency indicators.

So, H_0 that PSBs posted no significant improvement in operating performance post-amalgamation with merged banks in case of SBI, Canara and Indian Bank under profitability parameter and SBI, Canara and Union Bank for solvency ratio may be accepted. For three other banks namely BOB, PNB and Union Bank, H_1 that PSBs posted significant improvement in operating performance post-amalgamation with merged banks under profitability ratio and BOB, PNB and Indian Bank under solvency ratio can be accepted. As regards efficiency indicator, in view of mixed results, H_0 that PSBs posted no significant improvement in operating performance post-amalgamation with merged banks for all six banks may be accepted.

Conclusion

Financial distress or bankruptcy has been an important driving consideration for merger of weak banks with stronger banks in India. It is pertinent to observe that all the six enlarged banks in the study lagged in achieving significant gains in efficiency parameters such as NIM, net profit, and OP/WF ratios with little variations. It indicates internal discipline is more conducive to make bank management efficient in India's PSBs, apart from external equity support periodically to improve solvency of banks. ROAs depend on both internal policy of the bank and fiscal policy of the Government apart from trade cycles in the economy. ROE can be improved through cost management and higher non-interest income.

Managerial Implications

With these inputs, the foregoing analysis has tried to find out, whether profitability, solvency and efficiency issues can be addressed through merger of PSBs. As the Government's headroom for higher deficit financing is reduced, scope for PSB lending is reduced. To escape from the dilemma of low profitability and high NPA call for recovery of bank dues to ensure uninterrupted credit expansion. Regulatory enforcement to improve loan recoveries in India is the need of the hour, for improved profitability, bank solvency and internal efficiency.

Limitations of the Study

Research analysis centres around operational aspects of several PSBs after amalgamation into fewer entities. However, as the size increases, the law of diminishing returns may set in, because with reduced competition, a few banks can control the economy as cartel operators. It leads to higher bank charges and lower interest for depositors (Banerjee, 2017, p. 44). However, human aspect of post-amalgamation of PSBs is not considered in this article. Employee efficiency is an important issue in bank merger and it has impact on cost considerations and social issues. Large size of a bank cannot ensure more profit without operational efficiency as evidenced from European countries. Difference in organisation culture has a bearing on merged bank. Shareholder value reacts differently post-merger of two banks (Undi & Basavraj, 2019, p. 38). With technological upgradation of banks and large-scale use of digital banking, there is scope for business diversification. More research is required in human resources and technological development of banks post-merger to mitigate the hazards of social issues.

Acknowledgement

The authors are grateful to the anonymous referees of the journal for their extremely useful suggestions to improve the quality of the article. Usual disclaimers apply.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

Note

1. lakh = 0.1 million; 1 crore = 10 million.

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Original Article

An Empirical Analysis of Motivating Factors Behind Purchase of Gold Investment

IMIB Journal of Innovation and Management
4(1) 108–124, 2026

DOI: 10.1177/ijim.241281557
jim.imibh.edu.in

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Abstract

This study is based on a sample of 613 respondents chosen using judgement cum convenience sampling to understand the gold-buying behaviour of individual investors. The paper attempts to explore the various attributes that investors consider important while investing in gold. Six underlying factors of importance are extracted, namely, family and cultural influence, diversification properties, safe haven properties, financial security, wealth preservation and liquidity. The influence of family and culture is evident from the results, with buying at weddings and festivals being a major reason to purchase gold, followed by investment purposes. Furthermore, the attitude of investors towards the imposition of taxes and tariffs on gold by the government is found to be negative, which could adversely affect investment in gold. Taking the findings into consideration, regulatory authorities could devise strategies to formulate a comprehensive gold policy to help gold contribute more to the exchequer instead of adversely affecting the current account.

Keywords

Investors, gold, investment, liquidity, factors

Introduction

Gold is the most sought-after metal in the world, not merely as a commodity but as an investment avenue. It possesses unique rationales and persona, symbolising

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power and wealth due to its physical properties and scarcity. Historically, gold has played a central role in international financial systems and civilisations. Despite a decade of declining returns that blurred its enduring legend, gold prices have significantly increased in recent years. Gold constitutes a significant portion of the reserves of leading countries' national banks (Elfakhani et al., 2009). This yellow metal has a long record as a commodity, a store of value, wealth, part of culture and as financial media. Gold is easy to follow, enjoying higher liquidity among several investment alternatives (Singh & Joshi, 2019). It has a long history as an investment avenue and a promising future for investors seeking to minimise their tax liabilities (Van Tassel, 1979).

In the current scenario, where recession grips countries, the comeback of gold as a safe haven asset has strengthened investor confidence. Geopolitical stress, volatile markets, unpredictable securities markets, inflationary fears, depreciating currencies and fluctuating oil prices have inclined investors towards this traditional metal—Gold (O'Connell, 2007).

Gold is deeply interwoven within the traditions and customs of India, utilised in adornments, coinage and electronics. It plays a significant role in Indian religious festivals and weddings, where it symbolises wealth and tradition (Verma & Sharma, 2014). This inclination towards gold has led to a rise in imports to meet growing rural and urban demand. In 2017, gold imports in India stood at 855 tonnes, with 562.7 tonnes accounted for by jewellery demand (WGC, 2017), indicating revived growth. The total gold stock in India is estimated at 23,000–24,000 tonnes.

The rest of the paper is structured as follows: the second section covers a brief literature review regarding the factors that may affect investor perceptions while investing in gold. The third section highlights the literature gap and motivation behind the study. The fourth section outlines the objectives of the paper. The fifth section covers the research methodology used for the study. The analysis and discussion are presented in the sixth section. The seventh section presents conclusion and managerial applications of the study, and the eighth section reveals the limitations and suggestions for further research.

Literature Review

Despite the fact that gold is no longer a long-standing anchor in the international monetary system, it continues to allure investors. A plethora of research has focused on gold as a store of value, safe haven, money and investment avenue (Allese, 2008; Batten et al., 2010; Baur & Lucey, 2010; Blose, 2010; Capie et al., 2005; Jastram, 1977; Mishra, 2014; O'Connor et al., 2015; Starr & Tran, 2008; Vaidyanathan, 1999; Van Tassel, 1979). Van Tassel (1979) and Singh and Joshi (2019) found that gold is a safe means of beating inflation, a store of value, helps in minimising tax and enjoys better liquidity than many other financial assets.

There are numerous reasons for the rising demand for gold, one of which is the rehypothecation of commodities such as copper and gold as collateral security against loans, aiding in carrying trade. The fact that gold is

denominated in dollars has established it as a hedge against dollar risk in China (Kaminska, 2011).

One of the earlier studies in this field, conducted by Jastram (1977), found that gold is an effective inflation-deflation hedge. Van Tassel (1979) also concluded that gold, as a commodity, would be in demand in the future due to its status as an exhaustible resource and a long-term inflation hedge. Further studies by Chua and Woodward (1982), Blose (1996), Mani and Vuyyuri (2003), Starr and Tran (2008) and Singh and Joshi (2019) confirmed these results.

Gold is also considered a safe haven asset for equity indices in different phases of the COVID-19 pandemic crisis, corresponding to the timing of fiscal and monetary stimuli to support the weakened economy (Akhtaruzzaman et al., 2021). Another reason for the increasing demand for gold worldwide is its higher returns and a negative correlation with the securities market, making it a powerful component in investment portfolios (Van Tassel, 1979). Carter et al. (1982) and Faff and Chan (1998) presented evidence of uncorrelated gold prices and the stock market. A study by Pandey (2023) found that gold prices have a substantial impact on sectoral indices in the Indian stock market, particularly the auto and information technology sectors, which exhibit short-run causality with gold prices.

Gold helps diversify portfolios and can be used as a hedging tool during crises (Gaur & Bansal, 2010; Kaliyamoorthy & Parithi, 2012; Sumner et al., 2010). It is used as an investment asset class by investors (Jain & Biswal, 2016). In terms of hedging effectiveness, gold is the most effective hedge for the stock indices of France, Germany, Italy, Japan, the United Kingdom, the United States and the MSCI G7 index (Shahzad et al., 2020). It is one of the oldest ways to store wealth and is traded widely around the globe. O'Connor et al. (2015) stated that the main sources of demand for jewellery in Asia are sociocultural factors, with the biggest markets for gold jewellery being India and China. Following the financial crisis of 2008, the demand for gold in Western countries also increased due to soaring gold prices and increased apprehension in financial markets. However, Tran et al. (2017) found that the interventions of central banks and their regulations create instabilities in the gold market. Verghese and Chin (2022) found that investors' behavioural belief and control belief significantly and positively affect their respective attitudes towards behaviour and perceived behavioural control, thereby influencing their intention to purchase bullion.

Research Gap and Motivation

Gold is considered a store of value and wealth, and India is a major player in the gold trade. There is an urgent need to study the factors affecting gold investment in India, as existing studies often focus on gold jewellery rather than gold as an investment avenue, usually within specific local areas. It is also evident that previous research has proceeded without a standardised and valid measure of the construct from an investors-based perspective. Considering the significance of gold in the investment portfolio, the study attempts to bring out the factors influencing the attitudes of gold investors. Earlier studies focus on the various characteristics of gold and its relationship with various macroeconomic determinants. However,

little research has been conducted on the attitude of investors towards gold as an investment avenue. Therefore, it is necessary to develop an understanding of the factors that investors consider, alongside gold prices, when investing in gold. In the present study, an attempt has been made to identify the factors that induce investors to invest in gold.

Objectives of the Study

The review of the literature indicates that several studies have examined gold as an investment option, but few have explored the factors that influence the investment decisions of gold buyers. The cited literature focuses more on the factors affecting the price of gold rather than the investment behaviour of investors in gold. Limited attempts have been made to identify the important underlying factors of gold investment, their relative importance and the general attitude of investors towards gold as an investment. The present study addresses these limitations. The objective of this study is to understand the general attitude and behaviour of individual investors towards gold as an investment. The study also attempted to identify the underlying factors that motivate investors to buy gold.

Methodology

The study is based on primary data collected through a well-structured and pretested questionnaire. An exploratory research approach was adopted to identify the relevant variables, and a structured questionnaire was prepared by reviewing the literature (e.g., Baur & Lucey, 2010; Capie et al., 2005; Dempster, 2006; Hillier et al., 2006; McCown & Zimmerman, 2007; Michaud et al., 2006; Pulvermacher, 2004; Starr & Tran, 2008; Van Tassel, 1979). Discussions and interactions with investors and financial analysts specialising in gold investment also informed the questionnaire design.

The questionnaire was divided into two major parts. Section A employed a 5-point Likert scale ranging from 5 (strongly agree) to 1 (strongly disagree) to assess statements related to the investment attributes of gold. Section B covered demographic information. The preliminary draft of the questionnaire was pretested with 60 investors through personal in-depth interviews, which led to improvements in the questionnaire and a reduction in the number of statements from 48 to 30.

Data were collected from investors in major cities of Northern India, namely Amritsar, Jalandhar, Ludhiana, Chandigarh, Gurugram and Noida. The non-probabilistic judgement cum convenience sampling was used to select the broking firm and further investors were selected from the list provided by brokers to collect data. Since it was not feasible to enlist entire individual investors investing in the gold market from the above-mentioned cities, a list of individual gold investors was prepared with the help of brokers, and after that a sample of investors was selected from the list. The lists included the names and contact numbers of the individuals. It is worth mentioning that the individual investors were residents of the cities surveyed and the study is confined to the octroi limits of the

mentioned cities. The field survey was conducted from May 2019 to October 2019. For data collection, investors were to be selected in equal proportion from each of the cities mentioned above. Nearly 115 investors were contacted in each city to achieve the desired sample of 700; however, 613 complete responses were received and further used for analysis purposes. Incomplete questionnaires, where respondents left some questions blank, were discarded from the analysis. The study focuses on the motivating factors behind the purchase of gold as an investment, with the analysis confined to a sample of investors only. The demographic profile of the selected investors is shown in Table 1 in the annexure.

Multivariate factor analytic technique was used to identify the factors that may influence the investors' decision while investing in gold and the analysis was conducted using the Statistical Package for Social Sciences (SPSS) version 25.

Table 1. Demographic Characteristics of Sampled Investors.

Variables	Description	No. of Respondents (Percentage)
Age	Less than 30	166 (27.08)
	30–40	313 (51.06)
	40–50	92 (15.01)
	50–60	35 (5.71)
	Above 60	7 (1.14)
Educational qualifications	Undergraduate	28 (4.57)
	Graduate	194 (31.65)
	Post Graduate	304 (49.59)
	Doctorate	44 (7.18)
	Professional	43 (7.01)
Profession	Service	441 (71.94)
	Business	55 (8.97)
	Professional	56 (9.14)
	Housewife	61(9.95)
Annual family income	Up to 2 lacs	77 (12.56)
	2–4 lacs	120 (19.58)
	4–6 lacs	159 (25.94)
	6–8 lacs	93 (15.17)
	8–10 lacs	73 (11.91)
	Above 10 lacs	91 (14.85)
Sex	Male	331 (54.00)
	Female	282 (46.00)
Marital status	Married	395 (64.44)
	Single	218 (35.56)

Analysis and Discussion

Demographic Profile of Respondents

The demographic profile of the respondents is presented in Table 1. It shows that 51.06% of the respondents are in the age group of 30–40 years, with 54% being male and 46% female. Additionally, 49.59% of respondents are postgraduates, 64.44% are married, 71.94% are salaried persons and 25.94% have an annual family income of 4 to 6 lakh. (See Table 1)

General Attitude of Investors Towards Gold Investment

Sources of Information.

The sources of information for the purchase of gold are given in Table 2. As regards the investment behaviour of consumers, it is seen that 41.5% of the respondents themselves take investment decisions. The results depict that the investors rely on Self-analysis of the information received from various sources for investing in gold with 41.5% of the respondents choosing it followed by availability of market information (23.1%), the recommendation of family members and friends (18.2%), the recommendation of the advisor/broker (8.7%) and the comments of experts (8.5%). In our study, it is clear that instead of depending on a single source of information investors analyse the information collected from all available sources themselves for making investment decisions (Table 2).

Purpose of Buying Gold

Table 3 enumerates the justifications for buying gold. 294 respondents, or 47.96%, out of the 613 respondents said they buy gold as an investment. 72.3% of respondents said they like to buy gold on special occasions, while 18.3% do it for religious or customary reasons, 17.94% for adornment or self-satisfaction, and 14.2% as a status symbol. Consequently, 294 investors, or 48% of all investors, are likely to prefer buying gold as an investment, and the remainder 319 investors buy gold for non-investment related reasons, like status symbols, customs, or religious reasons etc.

Table 2. Sources of Information.

Source of Investment Decision	Number of Respondents	Percentage
Self-analysis	277	41.5
Information available in market	154	23.1
center	57	8.5
Recommendation of family and friends	122	18.2
Recommendation of advisor/broker	58	8.7

Table 3. Purpose of Buying Gold.

Purpose of Buying Gold	No. of Respondents	Percentage
For religious and tradition	112	18.3
On occasions like festivals, weddings etc.	443	72.3
As status symbol, gives sense of pride	87	14.2
As investment	294	47.96
For adornment purpose	110	17.9

Note: Multiple responses are allowed so the total comes out to be more than 100%.

Table 4. Average Time Period of Investment in Gold.

Time Horizon of Investment	No. of Respondents	Percentage
Upto 1 year	95	15.4
1–5 years	156	25.4
More than 5 years	363	59.2
Total	613	100

Average Time Period of Investment in Gold

Table 4 reveals that more than half of the investors, that is, 59.2% of investors like to hold their investments for the long term, followed by 25.4% investors like to hold for medium term and lastly 15.4% of individual investors like to hold for less than a year. The results reveal that majority of investors hold gold for long term investment rather than for speculation (Table 4).

Attitude Reaction to Taxes (Tariff/Levies) on Gold

An attempt has been made to study the reaction of the investors towards changes in the tax structure (percentage of taxes) on gold. The change in tax structure directly brings variation in the price of gold. In order to study how changes in the price of gold due to changes in taxes influence their behaviour, their response with respect to the increase and decrease of taxes on the price of gold is sought. Table 5 and 6 depict the reaction of the investors when either the new range of taxes is imposed on gold, that is, their reaction to implementation of GST on gold and when there is hike in the existing rate of taxes, that is, increase in the custom duty on gold.

Reaction to Implementation of GST in Gold

Table 5 shows the attitude of the investors towards implementation of GST on gold revealing mixed reaction of the respondents. Majority of the respondents (39.7%) of respondents answered that it would discourage their gold investment, followed by 35.1% felt that it would not affect their investment in gold and 25.2% were of idea that it would encourage their investment in gold. The results reveal that the implementation of GST has not been welcomed by the investors and would have adverse impact on the investment in gold (Table 5).

Table 5. Reaction to Implementation of GST in Gold.

Reaction	Number of Respondents	Percentage
Encourage the investment in gold	154	25.2
Discourage the investment in gold	244	39.7
Have no effect on gold investment	215	35.1
Total	613	100.00

Table 6. Reaction to Increase in Import Duty on Gold.

Reaction	Number of Respondents	Percentage
A positive impact on your gold investment	113	18.4
A negative impact on your gold investment	338	55.2
No effect	162	26.4
Total	613	100.00

Reaction to Increase in Import Duty on Gold

Table 6 indicates the reaction of investors to increase in custom duty on gold. More than half of the respondents, that is, 55.2% of respondents thought that it would negatively impact their gold investment followed by 26.4% of the respondents' responded that it would not affect their investment in gold and 18.4% felt that hike in import duty would positively influence their gold investment. The results reveal that hike in import duty would not been welcomed by the investors and would have adverse impact on the investment in gold. The results reveal that the increase in import duty on gold would have adverse impact on the investment in gold (Table 6).

Factor-Analytic Results

Factor analysis was employed to identify the significant factors influencing investors to purchase gold as an investment. The reliability and validity of the scale were tested to ensure the data was suitable for exploratory factor analysis.

Reliability and Validity of the Scale.

The most widely used measure for diagnosing the reliability of the entire scale is Cronbach's α. To assess the internal consistency of the entire scale, the reliability was checked using Cronbach's α before applying factor analysis (Malhotra, 2008). Its value varies from 0 to 1, with the generally agreed-upon lower limit for Cronbach's α being 0.70, although it may decrease to 0.60 in exploratory research (Hair et al., 2005). The overall Cronbach's α for the 30 variables considered in the study was estimated at 0.924, as shown in Table 7, which can be regarded as adequate given the exploratory nature of the research.

Content validity is a systematic evaluation of the representativeness of the content of a scale for measuring the task at hand (Malhotra, 2008, p. 316). Content

Table 7. Results of KMO and Bartlett's Test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.893
Bartlett's Test of Sphericity: Approx. Chi-Square	14640.115
Df.	435
Sig.	0.000*
Cronbach's Alpha	0.924

Note: *Significant at 1% level.

validity was established through a review of the existing literature and discussions with experts in the field.

After confirming the reliability and content validity of the scale, the Kaiser-Meyer-Olkin (KMO) test was applied to check the appropriateness of the collected data for factor analysis (Kaiser, 1974). The KMO measure of sampling adequacy (MSA) confirms that the sample is adequate for conducting exploratory factor analysis. The KMO statistic varies between 0 and 1, with values greater than 0.5 being acceptable. Values between 0.5 and 0.7 are considered mediocre, between 0.7 and 0.8 are good, between 0.8 and 0.9 are great and above 0.9 are superb (Field, 2000). The KMO MSA was found to be 0.893 (Table 7), indicating that the sample is statistically significant for factor analysis.

Barlett's test of sphericity is used to test whether variables are unrelated, meaning the correlation matrix is an identity matrix (Malhotra, 2008). The approximate statistic is 14640.1 with 435 degrees of freedom, which is highly significant ($p < .000$), as indicated in Table 7 in the annexure, showing that the data is appropriate for factor analysis (Table 7).

Factor Extraction

The principal component method with varimax rotation of data reduced the 30 statements to six major factors identifying the motivators behind investing in gold as an alternative asset class in the portfolio. The factor loading greater than 0.40 is considered more important and 0.50 or greater is considered very significant (Hair et al., 2005).

All these factors as extracted and taken together are found to explain 73.99% of the total variance. The data, therefore, were found reliable. Cronbach's alpha for the entire scale was estimated to be as high as 0.924 (Table 7). Table 8 shows the extracted six factors, loadings of all statements, Eigenvalues and percentage of variance explained by each factor. These factors have been given appropriate names on the basis of the variables that have loaded onto each factor (Table 8).

Family and Cultural Influence

'Family and cultural influence' has emerged as the most important factor, which is explaining as high as 14.98% of total variance by far. This factor was found to be associated with six variables, namely the influence of friends and relatives; parents and spouse; influence of cultural and traditional values and the demonstrative needs. These six items explain that the major reason for buying more gold

Table 8. Factor-analytic Results Indicating Factors Influencing Purchase of Gold as Investment.

Factors	Factor Naming	Labels	Statements	Loadings	Eigen Value	% of Variance
Factor 1	Family and cultural influence	S26	Parents and spouse influence my gold investment decisions.	0.876	9.509	14.98
		S27	It satisfies demonstrative needs (adornment/status symbol).	0.843		
		S25	My relatives and friends invest in gold which motivates me to make gold investments.	0.839		
		S28	Gold purchasing is done majorly on occasions like weddings, festivals, birthdays etc.	0.830		
		S24	Our culture and traditional values motivate me to invest in gold.	0.784		
		S4	It passes through generations as heritage.	0.768		
Factor 2	Diversification properties	S18	It provides ideal means of diversification.	0.922	3.583	14.29
		S15	Gold investment helps distribute portfolio risk.	0.891		
		S16	The gold price is not affected by fluctuations in stock market.	0.890		
		S19	It gives higher returns than other investments (like shares, bonds, mutual funds etc.).	0.889		
		S22	Other market investment avenues are more volatile and riskier.	0.842		
Factor 3	Safe haven properties	S12	It protects portfolio and wealth against economic crisis.	0.875	2.839	12.18
		S11	It provides protection against severe financial crisis.	0.865		
		S30	It protects portfolio against uncontrolled government actions.	0.793		
		S10	It acts as hedge against inflation and currency devaluation.	0.747		
		S17	Gold price acts as hedge against falling dollar rate.	0.740		

(Table 8 continued)

(Table 8 continued)

Factors	Factor Naming	Labels	Statements	Loadings	Eigen Value	% of Variance
Factor 4	Financial security	S14	It is evergreen investment as even banks maintain gold reserves.	0.787	2.348	11.34
		S13	Gold can be used as collateral security against loans (like gold loans).	0.777		
		S23	It provides a sense of security (against future emergencies).	0.762		
		S20	Gold is a safe mode of investment.	0.745		
		S21	There is lack of awareness of other investments.	0.717		
Factor 5	Preservation of wealth	S8	It is non-destructible form of preserving wealth.	0.816	2.191	10.96
		S2	Gold preserves the real value of investment.	0.762		
		S3	It is a long-term strategic asset (convenient for holding as long term investment).	0.759		
		S29	The drop in the price of gold is only temporary.	0.727		
		S0036	Default risk is low in gold in-vestment.	0.707		
Factor 6	Liquidity	S5	It enjoys better marketability than other assets.	0.878	1.743	10.28
		S9	It is accepted internationally.	0.867		
		S1	It is highly liquid (easy to buy and sell gold.).	0.846		
		S7	It carries liquidity risk.	0.789		

Note: All factors as extracted taken together are found to explain 73.99% of the total variance.

is the influence of family as well as the social and traditional values attached to it. The gold has been deeply rooted in the social psyche of the Indians (Mani & Vuyyuri, 2003), and it has a long history of social value and acts as a store of value (Schoenberger, 2011; Van Tassel, 1979). Further, gold once bought can be passed to daughters as gifts for their financial security (Tariq et al., 2007). Singh and Joshi (2019) stated that there is an old association between the metal gold and Indian Culture.

Diversification Properties

'Diversification properties' comes out to be the second important factor which explains 14.29% of the total variance. The variable namely gold gives an ideal means of diversification has the highest factor loading as 0.922. As gold helps in portfolio diversification, it is another reason which attracts investors. Carter et al. (1982), Jaffe (1989), Chua et al. (1990), Blose (1996) and Baur and Lucey (2010) have found gold to be a significant portfolio diversifier as it is presumed to have either no or low correlation with other risky and volatile assets.

Safe Haven Properties

The third factor is safe haven properties with amounting to 12.18% of the variance. Baur and Lucey (2010) clearly defined a hedge as 'an asset that is uncorrelated or negatively correlated with another asset or portfolio on average'. However, an asset may be a hedge which protects our portfolio on average but fails in times of financial stress or economic turmoil. Baur and McDermott (2010) found gold to be a safe haven for equities. It is considered as a safe haven asset which in times of crisis protects wealth from extreme market movements (Abken, 1980; Haugom, 1990; Mishra, 2014; Starr & Tran, 2008). According to Lawrence (2003), gold is indestructible and fungible and this feature sets gold apart from other commodities. It also acts as a hedge against inflation (Patel, 2013; Singh & Joshi, 2019).

Financial Security

'Financial security' comes out to be the fourth motivating force behind gold investment with 11.34% of the total variance. It is a safe investment with no credit risk attached as it is retained by central banks as reserves (Mani & Vuyyuri, 2003; Singh & Sharma, 2018). However, there is lack of awareness of other investment options that are available in the market, which forces people to buy gold which is often called a safe asset. Akhter and Sangmi (2015) found that the level of awareness among youth for the stock market is low.

Preservation of Wealth

This factor emphasised gold's role as a 'preservation of wealth' explaining 10.96% of the total variance. In contrast to other financial assets, the real value of gold remains intact and thus, with the passage of time, gold has always protected its real worth against adverse impact of inflation. There is a developing collection of research to study gold's role as a wealth preserver against the ravages of time. Capie et al. (2005) found that gold is a unique, homogeneous asset that has gained a specific amount of trust of investors in its role as protector of wealth over the

centuries. Gold acts as a long-term store of value (Mani & Vuyyuri, 2003; Singh & Joshi, 2019) and has maintained its real purchasing power.

Liquidity

The last factor contributing to 10.28% of the total variance is the liquidity of investment. Gold is almost as liquid as currency and in contrast to other financial assets, it is easy to dispose of (Singh & Joshi, 2019; Vaidyanathan, 1999). It is an asset which is of universal acceptance and when compared with various other financial and physical assets, it provides a liquid form of saving (Kannan & Dhal, 2008).

Conclusion and Future Implications

The study reveals that family and cultural influences are the most significant factors driving gold investment among individual investors, followed by gold's role as a portfolio diversifier. More than 70% of investors buy gold for occasions, such as weddings and festivals, whereas only about 48% purchase gold primarily as an investment. This indicates that gold continues to be regarded as a traditional asset in India, consistent with findings from previous research across different periods. Interestingly, nearly 60% of respondents prefer to hold gold for the long term, exceeding five years. This tendency to hold an unproductive asset like gold leads to funds being tied up. To address this, if the mindset of people cannot be changed, alternative strategies should be implemented. The government should focus on schemes such as the gold monetisation scheme to mobilise gold and offer various regulated alternative forms of gold investment to shift demand from physical gold to paper gold.

The study also finds that most investors make their own investment decisions, relying on past performance and available market information. This suggests that international news about gold can significantly influence investor decisions. When it comes to taxes on gold, higher taxes are found to negatively impact demand, implying that to curb rising gold demand, the government could impose more taxes. However, this could hinder the growth of the Indian gold market. Therefore, careful consideration is required before implementing any new taxes or duties on gold to avoid adverse effects on the market.

The awareness of gold bullion is high among investors, but knowledge about paper and digital gold is imprecise, necessitating investor education to boost investment in these products. Some investors appreciate the convenience and assured purity of sovereign gold bonds and paper gold for long-term holding. Therefore, marketing should emphasise product convenience, transparent pricing and quick processing. Gold prices typically move inversely to stock prices, making gold a valuable hedge during financial market volatility and currency fluctuations, particularly against the US dollar. Gold also acts as a superior inflation hedge, correlating positively with the consumer price index in India over the past two decades, suggesting that including gold in investment portfolios can reduce risk during financial turmoil and inflation. However, the rising

demand for physical gold, primarily met through imports, exacerbates India's current account deficit. Government policies aimed at curbing gold imports may be ineffective due to gold's hedging benefits. Thus, addressing inflation directly and providing alternative investment opportunities, along with promoting paper gold through relaxed regulations, may reduce gold imports and support economic stability.

Limitations and Suggestions for Future Research

This study focuses on the motivating factors behind gold as an investment avenue. However, these factors are based on the perception of the investors, which may keep on changing with time. Therefore, the study could be periodically updated by enlarging the sample size. The main limitations of the study are that the sample is skewed towards respondents residing in major cities of northern India (Amritsar, Jalandhar, Ludhiana, Chandigarh, Gurugram and Noida), and it may be difficult to generalise the results. Thus, its scope can be expanded by extending the study to a larger area.

Further, it is known that gold is a traditional asset interwoven in the culture of India. It is suggested that the study may be replicated with a considerate proportion of respondents from business class as well.

Acknowledgements

'The author is grateful to the anonymous referees of the journal for their extremely useful suggestions to improve the quality of the article'. Usual disclaimers apply.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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Original Article

Achieving Financial Sustainability Through Financial Reorganisation: Evidence from the Ellora Paper Mills Ltd

IMIB Journal of Innovation and Management
4(1) 125–135, 2026

DOI: 10.1177/ijim.251314643
jim.imibh.edu.in

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Abstract

All the sectors of the economy strive to get the limited finances that are available in the economy. The financial environment of the economy should ensure that restricted funds are available for firms that can make the best possible use of them. In that scenario, all firms on the verge of bankruptcy or facing financial distress need to release their funds for use by efficient firms in the economy. The present study intends to assess the impact of financial reorganisation on the operating efficiency of Ellora Paper Mills Ltd. This private limited company manufactures a variety of colour paper in India.

The empirical study is based on secondary data extracted through the company's Financial Statements using the CMIE-Prowess database for The Ellora Paper Mills Limited from 2007–2008 to 2022–2023. Altman's z-score model was used to consider the level of sickness, and the regression model was applied to the various ratios, assessing profitability, liquidity, solvency, and efficiency for hypothesis testing with the help of SPSS.

The results indicate that the company's operating efficiency improved significantly post-financial reorganisation. The study provides insight into how finance/funds need to be allocated/reallocated to firms to achieve the goal of economic sustainability through financial restructuring.

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Keywords

Financial reorganisation, operating efficiency, sustainability, paper manufacturing

Introduction

The performance of the various firms in the business environment is characterised by economic and financial stress. While economic stress is caused by competition, economic conditions, government control, etc., prolonged financial stress due to the absence of profits or returns leads to financial distress among firms. Financially distressed firms are characterised by poor operating performance and a sub-optimal capital structure, thus resorting to various measures to overcome the situation. Mergers, acquisitions, amalgamations, asset restructuring, and reorganisation are some of the measures the firms adopt.

Reorganisation or financial restructuring is a technique that is used by most organisations undergoing financial distress. It involves the change in an organisation's capital structure, that is, the change in the Debt and Equity component of capital. The companies need to revisit their capital structure to ensure that it is at the optimal level. It also helps to create a positive financial environment for the firm.

All the sectors of the economy strive to get the limited finances that are available in the economy (Mugenda and Mugenda, 2003). Currently, the banking system in India is responsible for regulating and managing over 70% of the funds that flow through the financial sector in the country (Sharma et al., 2023). Traditional financial institutions, such as banks, often refrain from lending to entrepreneurs due to the high risks associated with their projects and the need for more collateral. Similarly, sophisticated investors like venture capitalists (VCs) have stringent criteria for investment. VCs typically fund only a few hundred companies each year (Baid & Baid, 2022). The financial environment of the economy should ensure that restricted funds are available for firms that can make the best possible use of them. In that scenario, all firms on the verge of bankruptcy or facing financial distress need to release their funds for use by efficient firms in the economy.

Ellora Paper Mills Limited: An Overview

Ellora Paper Mills Limited is a Public Company incorporated on 14 November 1974 in Calcutta. It is classified as a non-government company.

> The company was originally promoted by Satyanarayan Kedia and Sitaram Kedia of Ajanta Paper & General Products Pvt Ltd. The company manufactures writing paper, printing paper, kraft paper, and packing paper—Vishwanath Kedia of Nitin Castings Ltd, and Bajranglal Dalmia of M/s. Prahladrai Dalmia & Sons joined as co-promoters in 1976. M/s. Prahladrai Dalmia & Sons became the present promoters of the Company in 1977 when Kedias of Nitin Castings Ltd took up the share of Kedias of Ajanta Paper & General Products. The company had a working capacity of 13,200 tonnes per annum. In 1988, the Company came under the provisions of the Sick Industrial Companies (Sp. Provisions) Act, 1985, and as per the requirement, a

> reference to the Board for Industrial and Financial Reconstruction was made. In 1993, the performance of the Company was severely impacted by the prolonged strike by the workers. The Company introduced a four crore modernisation plan spanned out over a period of two years to reduce cost reduction and improve quality in 1997. In 2007 and 2008, the company paid a dividend of 12% and 10%, respectively. Ellora Paper Mills Ltd shifted its Registered office from Kolkata to Ahmedabad in 2016. On 19.07.2017, Ellora Paper Mills got a notice from NCLT (Mumbai Bench) to begin the Insolvency Resolution process. (Quarterly newsletter for July–September 2017, IBBI)

The Ellora Paper Mills Limited had been in bankruptcy for several years. This study attempts to reflect that not all companies in the public sector are performing financially well. It examines the firm's operating performance after inducing financial restructuring. The present study attempts to add to the existing body of knowledge and literature on the influence of financial restructuring on operating performance. The study is arranged as follows: the second section covers a Review of past studies, the third section covers Research Methodology, and the fourth section covers the results and discussion. The summary of results is given in the fifth section.

Literature Review

Financial restructuring has been a means to achieve better performance for financially unviable firms (Siro, 2013). It is a mechanism to rework the firm's capital structure to enable it to be in a better financial position (Ahmed and Govind, 2018). Hotchkiss (1995), in his study titled 'Acquisition as means of restructuring firms in Chapter 11', surveyed 55 acquisitions and found that the firms merged with bankrupt targets significantly improved the operating performance. So, a financial initiative to improve the operating performance of the firms provided positive results. Penati and Zingales (1998) conducted a study on the Ferruzzi Group titled 'Efficiency and Distribution in Financial Restructuring: A Case of the Ferruzzi Group' in which they analysed the distributional and efficiency consequences of financial restructuring. The payoffs to the creditors were compared with those they would have obtained without any restructuring mechanism. It was concluded that there was distributional gain to the creditors, and the firm's operating efficiency, as measured by the ratios, improved after reorganisation. The study also emphasised the importance of allocation of control in financial restructuring. Chatterjee et al. (1996), in his study titled 'The Financial Performance of Companies Acquiring Huge Takeover Targets', focused on large taken-over companies from 1977–1990 and studied their financial performance and accounting profit. The study focused on the Cumulative Abnormal Returns (CARs) of the firms and concluded that acquiring firms saw an increase in accounting profit by taking over distressed firms. It was followed by a study by Mathias Kahl in 2002, which concluded that the firm's long-run and short-run operating performance is affected by its profitability, not size, leverage and debt structure. A summary of a few past studies is shown in Table 1.

Table 1. Previous Studies on Financial Restructuring.

Author	Year of Study	Title of Study	Result/Inference
Hotchkiss	1995	Acquisitions as a Means of Restructuring Firms in Chapter 11	Acquisitions result in improved operating performance even though many acquirers are highly levered
Zingales	1998	Efficiency and Distribution in Financial Restructuring: The Case of the Ferruzzi Group	The operating efficiency, as measured by financial ratios of restructured firms, improved after reorganisation
R.A. Chatterjee	2000	The Financial Performance of companies acquiring huge takeover targets	Acquiring firms saw increased accounting profits by taking over certain distressed firms
Mathias Kahl	2002	Financial Distress as a Selection Mechanism: Evidence from the United States	A firm's short-run and long-run survival probability is positively affected by its operating performance, but its size, leverage, and debt structure complexity do not jeopardise its survival chances
Denis and Rodgers	2007	Duration, Outcome and Post-Reorganisation Performance	Pre-filing firm operating profitability is the primary factor influencing the survival rate of a firm
Halkos and Tzeremes	2014	Analysing the Greek renewable energy sector: A Data Envelopment Analysis approach	The efficiency of firms has increased over time
Jiang et al.	2018	Operating efficiency evaluation of China listed Automotive firms: 2012–2016	The efficiency of all the listed firms slightly decreased due to the decline of the technical change and the improvement of the efficiency change
Zhou et al.	2022	The Effect of Green Transformation on the Operating Efficiency of Green M&A Enterprises: Evidence from China	Green mergers and Acquisitions have been favourable, and most organisations have benefitted and improved their efficiency

Source: Altman et al. (2017).

Later, the studies started focusing on sustainability and its importance in prioritising which firms to restructure. Halkos and Tzeremes (2014) surveyed Greece's renewable energy and concluded that restructuring increased the firm's profitability in the energy sector over time. Lingling and Wenqi (2022) studied the effect of green transformation on the operating efficiency of firms that underwent green mergers and acquisitions and concluded that it had a positive impact.

Research Objective

The current study focuses on assessing the operating efficiency of Ellora Paper Mills Ltd after undertaking financial restructuring. The study period spans from 2007–2008 to 2022–2023, that is, 15 years.

Hypothesis Development

The null hypothesis and alternate hypothesis developed for the current study are as follows-

Null hypothesis H_0: Financial restructuring does not improve the profitability, liquidity, turnover and operating efficiency of Ellora Paper Mills Ltd.

Alternate Hypothesis H_{01}: Financial restructuring improves the profitability of Ellora Paper Mills Ltd.

H_{02}: Financial restructuring improves the liquidity of Ellora Paper Mills Ltd.

H_{03}: Financial restructuring improves the turnover position of Ellora Paper Mills Ltd.

H_{04}: Financial restructuring improves the operating efficiency position of Ellora Paper Mills Ltd.

Data and Methodology

Data Source

The data was collected for 15 years, from 2007–2008 to 2002–2023. The ratios required to measure financial restructuring and operating performance have been extracted from CMIE-Prowess.

Research Methodology

The study has been conducted by analysing the impact of financial restructuring on the firm's operating performance.

The study uses Altman's *z*-score model to predict the firm's risk of bankruptcy. A simple linear regression model (Equation 1) indicated the company's operating performance. The prediction was made based on the effect of the financial restructuring on the firm's economic performance.

Linear regression model

$$Y = \beta_0 + \beta_1 x_1 + e \quad (1)$$

where

x_1 = Financial restructuring; e = Error term; β_0 = Intercept, β_1 = Coefficient of x_1. The financial restructuring of the firm has been measured through two ratios: total debt to total assets (TDTA) and debt–equity ratio (DER).

Operating performance has been assessed in terms of profitability (Return on Assets, i.e., ROA), Liquidity (Current Ratio, i.e., CR), Efficiency (Working capital to total Assets, i.e., WCTA) and Turnover (Sales to Total Assets, i.e., SALETR).

Altman's Z-score Model

The study first tries to assess the financial performance of the firm Ellora Paper Mills Ltd using the method provided by Altman Edward in 1968. The technique, known as Altman's *z*-score model, states that specific ratios have predictive power

Table 2. Altman's *Z*-score Model.

	Formula	Indicator	Description
X1	Working capital/total assets	Liquidity	The company's Working Capital is out of the total amount invested as Total Assets.
X2	Retained earnings/total assets	Profitability	The firm's ability to generate retained earnings out of the company's total assets. This parameter helps measure how much invested in the firm is being reploughed in the business.
X3	Earnings before interest and taxes/total assets	Earning Capacity	The company's ability to generate profits from the company's assets before interest payments and taxes.
X4	The market value of equity/book value of total debt	Market Performance	The value of the owner's fund in the business as compared to the outsider's fund.
X5	Sales/total assets	Efficiency	The measure of the ability of assets to generate revenue/sales.

Source: Altman et al. (2017).

to predict a firm's bankruptcy and financial distress. Altman suggested five ratios in his model. The ratios used in Altman's model are shown in Table 2.

Equation (2) defines the Altman's *z*-score formula.

$$Z\text{-score} = 0.012X1 + 0.014X2 + 0.033X3 + 0.006X4 + 0.999X5 \quad (2)$$

Based on the *z*-score obtained by a particular firm, Altman's model helped to identify if a specific firm is heading towards bankruptcy. The guidelines for reading Altman's *z*-score are provided in Table 3.

Z-scores were calculated for 15 years for Ellora Paper Mills Ltd. The results obtained are shown in Table 4.

Table 4 exhibits the value of the Altman *z*-score model of The Ellora Paper Mills Ltd from 2007–2008 to 2022–2023. The firm went through a period of financial distress until it went for restructuring in 2017–2018. A further look at Table 4 shows that the financial health of Ellora Paper Mills Ltd was in a distress zone after undergoing restructuring except for two years following restructuring in 2018–2019. For the rest of the period, the score has been below 1.80, indicating poor financial health. This shows that the firm was heading towards financial distress, which signalled bankruptcy soon. On 19th July 2017, the company was put under the Insolvency Resolution process. On 26 June 2018, the company's resolution plan was approved, and the firm underwent financial restructuring, thereby bringing about a change in the capital structure of the firm. After undergoing restructuring, the firm saw an improved performance for two years, but the *z*-score of the firm after that signalled a state of distress. Therefore, the company was required to improve its liquidity, profitability and efficiency to improve its economic performance.

Table 3. Altman's *Z*-score Guidelines.

Situation	Z-score	Zone	Remarks
I	Below 1.8	Red Zone	There is a high probability that the business will face financial distress shortly, and the company may need desperate measures to survive in the market.
II	Between 1.8 to 2.99	Yellow Zone	The firm falls in the grey area, which means there is less probability that the firm will face financial distress shortly.
III	3.0 and above	Green Zone	The business is financially sound, and there is very little probability that the firm will face financial distress in future.

Source: Sharma and Patra (2021).

Table 4. Altman *Z*-score Values of Ellora Paper Mills Ltd.

Year	Z-Score	Zone
2007–2008	1.23	Distress
2008–2009	1.75	Distress
2009–2010	1.19	Distress
2010–2011	0.86	Distress
2011–2012	0.89	Distress
2012–2013	1.22	Distress
2013–2014	1.17	Distress
2014–2015	1.66	Distress
2015–2016	1.54	Distress
2016–2017	1.50	Distress
2017–2018	1.53	Distress
2018–2019	2.11	Safe
2019–2020	1.99	Safe
2020–2021	0.23	Distress
2021–2022	0.31	Distress
2022–2023	0.33	Distress

Testing of Hypothesis

A simple linear regression model assessed the firm's financial performance as expressed in Equation (1). The prediction was made by evaluating the impact of financial restructuring on the firm's financial performance.

Financial restructuring of the firm has been measured through the two ratios, that is, TDTA and DER

Operating performance has been assessed in terms of profitability (Return on Assets, i.e., ROA), Liquidity (Current Ratio, i.e., CR), Efficiency (Working capital to total Assets, i.e., WCTA) and Turnover (Sales to Total Assets, i.e., SALETR).

Analysis of Results

A thorough analysis of results in terms of studying the impact of financial restructuring on the firm's operating performance was done to understand the relationship between the two. The firm's operating performance can be measured in terms of positive profitability, liquidity, turnover and efficiency improvement. The summarised results are shown in Table 5.

Table 5 indicates that the model coefficient of determination (adjusted R^2) was 0.591, 0.084, 0.360 and 0.095 for profitability, liquidity, turnover and efficiency, respectively.

The firm's operating performance variance is explained by its profitability and turnover. It means that a firm should focus on improving its sales and profits to see a change in its operating performance.

Table 5. Model Summary.

Model	R	R^2	Adjusted R^2	Std Error
Profitability	0.769	0.591	0.523	6.62834
Liquidity	0.290	0.084	−0.068	0.31520
Turnover	0.600	0.360	0.253	0.46989
Efficiency	0.309	0.095	−0.055	0.21072

Table 6. Summary of Results (at 5% Level of Significance).

S. No.	Hypothesis Statement	p Value	Results	Accepted/ Rejected
H_{01}	Financial restructuring does not improve the profitability of Ellora Paper Mills Ltd	.049	$p < .05$	Rejected
H_{02}	Financial restructuring does not improve the liquidity of Ellora Paper Mills Ltd	.001	$p < .05$	Rejected
H_{03}	Financial restructuring does not improve the turnover position of Ellora Paper Mills Ltd	.001	$p < .05$	Rejected
H_{04}	Financial restructuring does not improve the operating efficiency position of Ellora Paper Mills Ltd	.447	$p > .05$	Accepted

The summarised results of the study concerning the acceptance/rejection of the hypothesis are depicted in Table 6. The hypothesis statement regarding no impact of financial restructuring on liquidity, profitability, turnover and efficiency of the firm stands rejected as the findings suggest that financial restructuring does improve the liquidity ($p = .001$), profitability ($p = .049$) and turnover ($p = .001$) of Ellora Paper Mills Ltd. However, there is no significant effect on the firm's operating efficiency ($p = .447$).

Conclusion

The current study involves assessing the impact of financial restructuring on the firm's operating performance, The Ellora Paper Mills Ltd.

It highlights that financial restructuring positively affects the enterprise's liquidity, profitability and turnover. The firm's restructuring changes its debt–equity structure, writing off unpaid liabilities and rearranging the capital structure components to achieve better operating performance. Sick companies can improve their performance by restructuring and releasing the funds invested for better use. This would lead to a better utilisation of the limited financial resources available in the economy.

Implications of the Study

The study provides insight to policymakers regarding allocating funds to various industries and firms. The financial institutions can use the Altman *z*-score model to assess the firms in distress and then decide on the release of funds. Also, the management can determine the operating efficiency and the utilisation of funds for proper management.

Future Research

The study is limited in establishing the impact of financial restructuring on the firm's operating performance. The reasons for the firm's inefficiency in operations and financial performance can be further analysed based on the above discussion. Second, there is a scope for examining the possibility of the firm going into liquidation/restructuring and finding the critical indicators that can be used to predict the outcome before the firm reaches that situation of bankruptcy/restructuring.

Acknowledgement

The authors are grateful to the journal's anonymous referees for their beneficial suggestions for the quality of the paper. Usual disclaimers apply.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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Appendix A

Table A1. Financial Ratios of Ellora Paper Mills.

Year/Ratio	Debt–Equity Ratio	ROA	CR	WCTA	Sales/TA	TDTA
2022	−0.96	−17.52	−0.07	−0.72	0.32	1.04
2021	−2.16	−15.23	1.08	0.03	0.23	0.98
2020	−2.81	−31.24	0.95	−0.02	2.00	0.83
2019	49.89	−4.54	0.99	−0.01	2.12	0.46
2018	38.91	−6.26	0.91	−0.03	1.53	0.40
2017	5.82	−2.32	0.73	−0.19	1.50	0.07
2016	4.68	−5.57	0.81	−0.11	1.55	0.11
2015	2.5	−1.27	0.88	−0.06	1.66	0.10
2014	1.44	−2.97	0.84	−0.08	1.17	0.09
2013	1.14	7.26	0.77	−0.12	1.21	0.10
2012	1.55	−8.98	0.5	−0.39	0.90	0.06
2011	2.37	−14.41	1.05	0.02	0.87	0.37
2010	2.18	0.22	1.12	0.06	1.19	0.21
2009	1.54	−1.15	1.08	0.03	1.75	0.23
2008	1.11	2.8	1.09	0.03	1.23	0.20

Source: CMIE-Prowess.

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