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# Conference Proceedings of **9th REMSONS** INTERNATIONAL RESEARCH CONFERENCE

On

**One Earth, One Family, One Future**  
Transformation Strategy for Business Growth



August | **26** | 2023

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**Conference Proceeding of  
9th Remsons International Research Conference  
On**

**One Earth, One Family, One Future –  
Transformation Strategy for Business Growth**

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**PH: 22 4520 7711 Extn – 2351/2352/ 2340 / 2112**

**Email : [sunita.pujar@dsims.org.in](mailto:sunita.pujar@dsims.org.in)**

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Mr. Ashok Saraf, who serves as the President of RSET and Chairman of DSIMS and DSGS, extended his blessings and conveyed his heartfelt best wishes for the success of the 9th Remsons International Research Conference in 2023.





## **Excerpts of Keynote Speech**

**Mr. Krishna Kejriwal (CMD, Remsons Industries Ltd.)**



The distinguished Chief Guest, Mr. Krishna Kejriwal, Chairman and Managing Director of Remsons Industries Limited, delivered a profoundly insightful inaugural address. He expounded on the true essence of the conference theme, drawing inspiration from India's G20 Presidency. Mr. Kejriwal delved into the objectives and responsibilities of businesses in the contemporary landscape.

During his address, Mr. Kejriwal articulated certain key principles essential for the betterment of society, including fostering solidarity among employees and humanity at large, championing environmental preservation (LiFE), advocating for gender equality, and promoting the adoption of alternative energy sources. He adeptly linked these pressing issues to the overarching transformation strategy for business growth, emphasizing the imperative of unity for survival.

Furthermore, Mr. Kejriwal shared that Remsons Industries Ltd. has actively embraced these best practices as part of their transformation strategy for business expansion. These practices include ensuring equal opportunities for all employees, implementing flexible work hours for women employees, investing in training and skill development to foster personal and organizational growth, embracing water harvesting and recycling, adopting alternative energy sources for power generation, offering Employee Stock Ownership Plans (ESOPs), providing comprehensive health coverage, and many other initiatives.

In his address, Mr. Kejriwal effectively conveyed the importance of aligning business strategies with societal well-being, emphasizing that such unity and responsible practices are vital for long-term success and sustainability.

## **Report of Remsons Centre for Management Research (RCMR)**

### **Dr. Sumana Chaudhuri (Chief Convener)**

Presenting the Report of Remsons Centre for Management Research (RCMR) 2022, Dr. Sumana Chaudhuri mentioned that under the aegis of RCMR, the Institute faculty members have published several research articles in the Journals of National and International repute, listed in Scopus and ABS or ABDC indexed. She also said that the Centre has conducted a five day Faculty Development Program on Elements of Research Using R and R Studio. Dr. Chaudhuri informed that RCMR has published Volume 5 Issue 1 of the ISSN Indexed Journal 'The Management Quest', which consists of five peer reviewed research papers and a book review by Hon'ble Director DSIMS Dr. C Babu.

### **Excerpts of Keynote Speech**



Keynote Speaker Ms. Andrea Kuhn, Her Excellency, Consul General of South Africa illuminated the audience with her thought provoking speech. In the backdrop of upcoming G20 Summit in 9-10 September, she discussed the importance of G20 to all walks of life. She emphasised the human centric development approach which in turn says the just and equitable growth for all. She appreciated India's leadership in terms of drawing attention of global leaders towards the debt laden crisis and the concern of Global South. She lauded India to achieve success in digital public infrastructure space, popularising millets globally, and working towards Sustainable Development Goals (SDG), Lifestyle for Environment (LiFE) and women empowerment and acted as a solution to global supply chain woes. She thanked India for proposing African Union to be permanent member of G20.

She then talked about BRICS expanded partnership for sustainable development and the 15th BRICS Summit of 22-24 August 2023 at Johannesburg, South Africa.

She informed the transition of BRICS to BRICS+ by welcoming six diverse groups of nations as new member countries (Argentina, Egypt, Ethiopia, Iran, Saudi Arabia and the United Arab Emirates) to reshuffle the global order and achieve a multi polar better balanced world which can address the concern of polycrisis.

## From Editor's Desk

**Dr. Sumana Chaudhuri**

When India formally took over the presidency of G20 on 1 December 2022, our Hon'ble Prime Minister Shri Narendra Modi Ji aptly observed that the country will work to promote a "universal sense of oneness" while it leads the G20. PM Modi mentioned that India's G20 agenda will be "inclusive, ambitious, action-oriented and decisive" and called for member countries to make India's G20 presidency one of "healing, harmony and hope". The theme of India's presidency is 'One Earth, One Family, One Future', inspired by the Sanskrit phrase 'Vasudhaiva Kutumbakam'. Inspired by the vision of our Hon'ble Prime Minister, we have adopted the same tag line for our 2023 Conference- One Earth, One Family, One Future: Transformation Strategies for Business Growth.

At a time of pandemic induced heightened uncertainties for the global economy, India's strong performance remains a bright spot. So, it's fitting that as an Institute of repute in the financial capital of India, we at RSET, DSIMS and DSGS, focus on a world facing multiple challenges and rising geopolitical tensions, where our leadership is critical—and beautifully captured in the theme of India's G20 presidency: One Earth, One Family, One Future.

The objective of this conference is to bring academicians, research scholars and practicing professionals to deliberate and present their perspectives on how companies should reimagining their business model and recreate sustainable competitive advantage, as they return to full throttle and get ready to confront the challenges and opportunities of the new world order championed by India. This Conference reflects the strength of DSIMS and DSGS Leadership, Faculty, Staff, and scholars actively pursuing the idea of “oneness” for our city and country.

Under the aegis of Remsons Centre for Management Research (RCMR), DSIMS and DSGS organized 9th Remsons International Research Conference (RIRC) on 26 August 2023. The conference was inaugurated by **Shri Krishna Kejriwalji**, Chairman and Managing Director Remsons Industries limited and delivered his insightful inaugural speech. Keynote Speaker **Ms. Andrea Kuhn**, Her Excellency, Consul General of South Africa illuminated the audience with her thought provoking speech.

The 9<sup>th</sup> Remsons International Research Conference received good responses from academia and industry in terms of research paper contributions. After initial screening, based on merit, around 14 selected research papers by Professors and Deans of various Management Institutes and by industry professionals had been presented in the Conference. The authors and participants deliberated and presented their perspectives on transformation strategies of business growth and universal sense of Oneness for the new world order championed by India with her G20 Presidency.

As a Session Chair, **Prof. Dr. Krupa Rai** discussed the future research direction in the field of business and management. She advised the researchers to study the theories and related literatures well, narrow down and deep dive to understand the objective, constructing the same research in a new context, location and culture and re-assessing and expanding theory, framework or model, one has addressed in his/her research.

Based on fair evaluation by Session Chair and blind reviewers, three of the six papers were chosen as the Best Paper Awardees.

**Mr. Lokesh Sharma**, an MMS student, eloquently encapsulated the essence of the presentations.

**Dr. Sunita Pujar**, the Conference Convener, expressed her gratitude during the plenary session, and **Prof. Vivek Sharma** did so during the valedictory session.

The Conference was a grand success, attracting authors, Ph.D scholars, paper presenters and participants from Mumbai as well as other reputed Management Institutions and Universities, as well industries across India. It has enabled the academicians, researchers and practicing managers to share their research findings, issues, concerns, doubts and insights for the future vis-à-vis specific domains of knowledge and practice. We hope that conference has not only provided great intellectual and social interactive platform to the participants, but also has given new perspectives from concrete facts. As a Convener, I am deeply privileged to present the Conference Proceeding 2023 and hope that this compendium of research papers will be found useful by the researchers, industry practitioners and policy makers.

## **Paper Track**

### **REMSONS INTERNATIONAL RESEARCH CONFERENCE on**

### **“One Earth, One Family, One Future – Transformation Strategy for Business Growth”**

**26 August 2023**

#### **Session - I**

**11.45 AM to 13.30 PM**

**Session Chair - Dr. Krupa Rai**

**Venue: 623**

<b>SN</b>	<b>TIME</b>	<b>AUTHOR</b>	<b>TITLE</b>
1	12.00 pm	Prof. Iram Tanvir Shaikh	Green Building: The Impact of Humanity on the Environment
2	12.15 pm	Mr. Rajeev Kamble & Mr. Sanjeev Thakur	A Study on the key factors that contribute to the effectiveness of positive risk management practices in project management, including risk assessment, response planning, and monitoring
3	12.30 pm	Mr. Michael D'souza & Dr. Merlyn D'souza	To devise a model to predict the change in 'The dominant' Leadership style among business managers in Greater Mumbai in view of India's Leadership at the G20 Summit 2023
4	12.45 pm	Prof. Ravindra Dey	Impact of Self-Efficacy, Resilience, Role Clarity and Autonomy on Employee Engagement
5	1.00 pm	Ms. Glancy Albuquerque	To Assess the Role of Financial Empowerment among Working Women
6	1.15 pm	Mr. Samir Sham Keskar	Electronic Bills of Lading (eBOL) in International Trade: Current Status and Future Outlook

**Lunch Break – 1.30. PM to 2.30 PM**



## Session - II

**2.30 PM to 4.00 PM**

**(Hybrid Mode)**

SN	TIME	AUTHOR	TITLE
7	2.15 pm	Ms. Charvi Hasmukh Shukla ( <i>Online Presentation</i> )	Will Coming Out of the Closet Help Me as a Leader? Interplay between Leader's Sexual Orientation, Employee Voice and Trust
8	2.30 pm	Mr. Paramjit Singh ( <i>Online Presentation</i> )	Role of Artificial Intelligence in Amplifying Customer Engagement: A Structured Literature Review (2002-2022)
9	2.45 pm	Ms. V Siji & Prof. Vani Kamat ( <i>Online Presentation</i> )	An Empirical Study on Sustainability of Outsourcing in Banking Sector in India Based on Risk -Benefit Analysis
10	3.00 pm	Mr. Aditya Kukade & Dr. Shailja Badra	A Study of Fundamental and Technical Analysis of Companies in FMCG Sector
11	3.15 pm	Mr. Sandesh Kolhe & Dr. S. Chaudhuri	Tool Development toward Corporate Economic Health Analysis: A Case Theoretic Perspective
12	3.30 pm	Mr. Mukesh Gupta & Dr. C Kaushik	To study the relationship between tyre service providers and puncture mechanics for setting a tyre services kiosk in petrol pumps across Mumbai region
13	3.45 pm	Dr. Sarika Jain	Exploring the Role of CSR on Organizational Commitment and Job Satisfaction: A Study of Banking Sector
14	4.00 pm	Ms. Riya Sodha & Ms. Pooja Goswami	Understanding the Impact of Employee Well-Being on Employee Retention

**4.15 PM – 5.00 PM**

**Observation, Comments and Summarization of Research Presentations**

**Prize Distribution**

**High Tea & Networking**

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# **Will Coming Out of the Closet Help Me as a Leader? Interplay between Leader's Sexual Orientation, Employee Voice and Trust**

**Charvi Hasmukh Shukla\***

## **ABSTRACT**

From workplaces being heterosexist in nature to making room for diversity, there has been a paradigm shift in recent years. Nevertheless, how will the employees react if their leaders come out of the closet tomorrow? This perspective in the field of research largely remains unexplored. To fill this gap in the present study, a conceptual model is developed to establish the missing link between the disclosure of a leader's sexual orientation and its impact on employee voice practices. The leader-follower relationship heavily relies on trust, and hence trust in the leader mediates the relationship between the constructs in this model. Using Goffman's stigma theory and Leader categorization theory, different areas of leadership, diversity, employee voice, and trust are integrated together. More precisely, this model suggests that when leaders disclose their membership to a stigmatized community, it builds subordinates' trust in the leader. This trust in the leader, in turn, promotes employee voice practices in the organizations. This article contributes to the literature in three ways. Firstly, it integrates three significant areas of research that have not been connected. Secondly, it presents a conceptual model bringing theories from different domains into the management research area. And thirdly, it provides three testable propositions that are derived from the conceptual model. Future research can test this conceptual model and follow the other future agendas stated toward the end of this paper.

**Keywords:** *Disclosure, Sexual orientation, Trust in leader, Employee voice, Goffman's stigma theory, Leader categorization theory, G20 Presidency, Conceptual model*

## **INTRODUCTION**

Women-led development holds key spot in the vision of the present government and in multiple occasions they have called out the need for inclusion of gender concerns in the core policy agendas. Now when India has taken over G20 Presidency from Indonesia it aims at bridging the gender gap to foster digital gender inclusion by addressing grass root causes of such divides across the G20 countries. To carry forward the aim of G20 Presidency Women 20 also known as W20, acts as an official engagement group to ensure that gender related consideration remain in the mainstream (Ministry of Women and Child Development, 2023). One such hidden issue which needs attention is to understand the changing nature of the workplaces. From workplaces being heterosexist in nature to making room for diversity (Bowring, 2017) workplaces in recent times have evolved a lot. As more people are coming out of the closet it is important to understand the consequence it has on people around them in a work environment. Indeed, today the field of research concerning the sexual minorities like LGBTQI+ is increasing (Zhou & Wang, 2022) but the research field of understanding the impact of the stigma of belonging to a sexual minority from a leader's perspective remains unexplored (Wang et al., 2021) and the current G20 Presidency by India gives an opportunity to explore the phenomenon of inclusion concerns.

*\* Fellow Programme in Management (FPM) student, XLRI Jamshedpur*

The leader follower relationship has received less attention from a standpoint where the leader discloses their sexual orientation. This relationship heavily relies on trust between both the parties (Bowring, 2017). This research gap is especially true for voluntary employee outcomes like employee voice practices. Can a leader's decision to come out of the closet impact an employee's voice practices? How is disclosure related to employee voice? What is the role of trust in a leader in the whole equation? Disclosure of sexual orientation is often referred to as coming out of the closet (Zhou & Wang, 2022). The decision of coming out is an important life event in that person's life (Achar & Gopal, 2021). This life changing event is not just crucial for a leader but also holds its influence on the follower's life (Fassinger et al., 2010). Therefore, this study establishes the missing link between disclosure of a leader's sexual orientation and employee voice practices.

Thus, an important question becomes: Is there actually any relationship between disclosure of a leader's sexual orientation, trust in the leader, and employee voice practices? While the literature has focused on all these three constructs individually or in different lights this is the first time all the three constructs are clubbed together, and an attempt is being made to explore the relationship dynamics between them. I aim to build a conceptual model to understand the phenomenon of disclosing a leader's sexual orientation on employee voice practices by establishing a relationship between both constructs through the mediating role of trust in the leader. More precisely, I focus on how the disclosure of a leader's sexual orientation affects the trust followers have in their leaders. I also explore how this trust in leaders further impacts employee outcomes like employee voice practices.

Through this paper I contribute to the literature in three ways. Firstly, I integrate three significant areas of research that have not been connected. Secondly, I present a conceptual model bringing theories from different domains into this research area. And thirdly, I provide three testable propositions that are derived from the conceptual model. These further address integration of four elements from different research standpoints. These regard research areas of leadership, diversity, employee voice and trust.

## **OVERVIEW OF CONSTRUCTS**

### ***Disclosure Of Leader's Sexual Orientation***

Sexual orientation is a word which is highlighted mistaken with sex or gender of a person (Bowring & Brewis, 2009). Hence from this study's standpoint sexual orientation is defined as the romantically/sexually attraction felt towards others (Achar & Gopal, 2021). The primary urge to come out of the closet is a common phrase used for disclosing one's sexual orientation roots in the heteronormative social setting from which an individual belongs (Achar & Gopal, 2021). It ranges from LGBTQI+ communities to sexual fluidity. In the previous studies it is found that how queer leaders perceive their sexual orientation to closely impact their leader-follower relationship. This primarily focuses on their abilities to engage with their followers. Such studies reflected on the importance of developing a work identity in congruence with a leader's identity outside work. This perception by leaders holds true because of an infamous

practice of concealment. This conscious concealment rooted from the anticipated discrimination one may face if they disclosed their sexual orientation.

*Why is it important to come out of the closet?* Many employees who lack mentorship and connections suffer in their career advancement. This especially becomes true for sexual minorities like gay and lesbians who are under constant pressure to lose their jobs or face ostracism. From an organization's perspective it may lead to loss of productivity due to the emotional trauma and poor communication one experiences at work. It becomes difficult for people in the closet to share information about family, romantic relationships, and other details about personal life at work. This situation worsens for a leader within a closet is in a situation when their follower shares information about themselves and the leader decides not to disclose their information to them making the followers perceive that the leader is unfriendly and might be seen as unapproachable. Ultimately after a proper risk and reward analyses the decision to disclose one's sexual orientation withholds with the leader themselves. Many work environments have started welcoming this disclosure and promote diversity at the workplace making it a safe space for those who want to come out (Bowring, 2017).

### ***Trust In Leader***

Subordinates trust in a leader also known as TIL refers to a psychological state where a follower accepts vulnerability for a positive expectation of the leader's future behaviours. Trust is formed based on inferences the followers make from a leader's action and character. Although trust takes time to build but one's established it strengthens the emotional bond between the leader and follower. The study by Islam et al. (2021) found that trust is highly influenced by an employee's perception of their leader's competency, care for others, and integrity.

*What is the importance of trust in a leader?* None of the party will engage in risky behaviours or be vulnerable if there isn't ample amount of confidence between the parties. Hence, before showing risky behaviours employees first investigate the strength on TIL. This holds true for organization members to accept time of change also. Major light surrounds a leader's character that shapes their behaviour. This will have a profound impact on both organizational as well as employee outcomes (Hendriks et al., 2020). As leaders are central in the process of building TIL it is important for one to understand how leaders treat their subordinates. TIL is a crucial element for an organization to be successful and has a strong influence on employee outcomes. Therefore, I argue that it is important to explore TIL within the disclosure and employee voice context (Bowring, 2017).

### ***Employee's Voice Practices***

The term voice widely refers to an employee's ability to have a say in their work activities and decision-making matters (Syed, 2014). In this present study employees from all communities are collectively represented under the umbrella of employee voice practices. Here the focal point is to understand employee voice as a voluntary, constructive, and upward channelled communication by employees (Arain et al., 2021). There is a flow of work-related ideas and suggestions done through the voice practices. Voice may be of two types. Promotive or prohibited. In promotive voice employees offer improvement suggestions while in prohibited voice raise their concerns of ongoing issues (Arain et al., 2021). In this study both forms of



voice are collectively grouped together for a bird's eye view under the header of employee voice practices. In future researchers can explore both the forms of voice in detail.

*What is the importance of employee voice practices?* In times when the organizational environment is becoming complex, employees play a vital role in providing valuable feedback to their managers to detect and interpret challenges. Managers often alone cannot handle all the challenges and rely on employee input to enhance the organization's functioning (Gao et al., 2011). Prior employees of minority groups did not use their voice due to the fear of mistreatment. Even many LGBTQI movements have facilitated the visibility of the missing voices. Whether an employee belongs to a certain sexual minority or not the managers/leaders act as the strategic players who are responsible for maintaining a balance between the management and the employees. When employee voices remain missing an organization tends to suffer largely. This is because voice mechanisms are an integral part of high-performance human resource management systems (Syed, 2014). Often voice is treated as a universal concept, and it applied largely to all the employees of an organization. Therefore, providing education and strategically including all the organizations stakeholders in the mechanism can promote the visibility of employee voice.

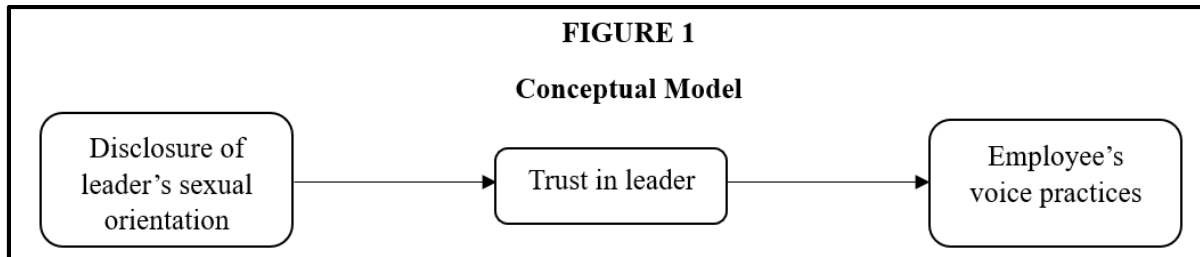
## **CONCEPTUAL AND THEORETICAL FOUNDATION**

Based on the in-depth literature review a conceptual model was formulated showcasing the relations between disclosure of a leader's sexual orientation, trust in the leader, and employee voice practices. The conceptual model, illustrated in Figure 1, reflects the linkage between the study variables. Together the conceptual model suggests ways in which disclosure of a leader's sexual orientation affects trust in leader, and that trust in the leader can mediate the relationship between disclosure and employee voice.

The primary objective of this study is to contribute to the literature of stigmatized leadership and the role played by trust in the leader to promote employee voice. Hence, I have used the most prominent theoretical underpinning to understand the role played by stigma in influencing employee voice practices. The stigma theory given by Goffman refers to stigma as a sign to expose something unusual. According to him the society categorizes people based on several normative expectations. This causes segregation of normals and deviants. People with stigmatic qualities like membership of marginal social groups, physical deformities and others are socially discounted in this process. Stigmatized person often is under the radar of information control and is under constant scrutiny to reveal stigmatic quality or not (Carnevale, 2007). In this study I provide a new theoretical lens and elaborate the term stigmatic quality to sexual orientation as well. Here this is becoming true for leader's who are in jeopardy of disclosing their sexual orientation in their workplace. Due to the stigma labelled on sexual orientation many leaders just like other people hesitate to come out of the closet.

In line with the stigma theory, Leader's categorization theory also known as LCT argues that good leadership lies in the eyes of the beholder. As per the Implicit leadership theories a leader's effectiveness largely depends on how they are received by the subordinates. It is prominently different from followership which is enforced through coercion and force (Van Quaquebeke &

Van Knippenberg, 2012). Here the subordinates voluntarily are open to accept the leadership which makes it long lasting. As per Van Quaquebeke et al. (2011) for a follower the more similar characteristics a leader displays to their idea of a good leader the more favourable followers will respond to the leadership. The argument is based into the cognitive image of an ideal leader in a follower's mind (Van Quaquebeke & Van Knippenberg, 2012).



Source: Author's contribution figure 1 depicting the conceptual model

### ***Disclosure of Leader's Sexual Orientation and Trust In Leader***

My argument in this present study is that when a leader decides to come out, trust plays a vital role in sharing this sensitive information (Bowring, 2017). Using the stigma theory by Goffman I present the view that coming out could be seen as a critical incident and can change the trust between a leader and follower. Hence establishing the premise of an existing relationship between disclosure of a leader's sexual orientation and trust in the leader (Bowring, 2017). For people belonging to the LGBTQI+ community their own perception of themselves as a leader can alter the way others form judgment about them. Stigma theory supports the premise that for a leader of a sexual minority the conscious decision to come out in public is a complicated issue in their workplace (Fassinger et al., 2010). As per Goffman, passing off as normals would not necessarily protect such stigmatized individuals from public scrutiny (Almack, 2007). Hence, the shared experiences and bond shared by followers and leader may increase or decrease the level of trust one has in their leader (Bowring, 2017).

For example, the prostate cancer patients needed to feel safe around their specialist to come out and disclose their sexual orientation. One of the key aids to facilitate this relationship was trust between both the parties. It was also observed that disclosing sexual orientation had an unpredictable consequence depending on the physician's response. Therefore, although the outcome of disclosure is not certain, but the process of coming out of the closet can be eased through building trust between the parties. Further a higher degree of openness about one's sexual orientation is associated with overall improved mental health. Here concealing or passing off as normals as per Goffman's stigma theory is viewed in negative light by the Almack (2007) study. She discussed that concealing identity is linked to reduced task efficacy and other employee outcomes. It is negatively associated with group activities and also holds a negative perception by others. The decision to disclose a leader's sexual orientation is a complicated stigmatized judgement by self and others. There is a positive space suggesting acceptance of LGBT individuals in the workplace with trust playing a key role in the whole process of coming out and this in turn will influence the subordinates' trust in the leader.

*Proposition 1: Disclosure of a leader's sexual orientation is positively related to trust in the leader.*

### ***Trust in Leader and Employee Voice Practices***

Trust in leader (TIL) is seen as a tool to promote employee voice. Voice mechanisms have gone beyond the formal meetings and employees disseminate information by providing informal feedback to the managers (Syed, 2014). Such organizations gain from increased TIL which influences employee voices also. Only listening to voices is not the end goal but the focus is to create an inclusive culture within an organization for collective growth. Leader categorization theory (LCT) holds vital premise in today's times when the business environment has evolved, and diversity management has become a core in the whole process (Syed, 2014). The more a target leader represents the ideal prototype for a follower the more recognition the leader will get (Van Quaquebeke et al., 2011) in terms of work-related outcomes. It explains why some leaders may build better relationships with their followers.

Given the risky behaviour of raising voice employees highly depend on the level of TIL to decide whether to use employee voice or not. Due to the power that rests in a leader's hand the level of trust between both parties plays a vital role in accepting the vulnerability that comes with voicing (Gao et al., 2011). The relationship between two is understood as higher the level of TIL by an employee the more they will feel safe towards using voice practise in the workplace. This again relates to an ideal leader's prototype a follower holds in their cognitive mind. Trusts is seen to influence the mental model of an employee (Islam et al., 2021) and governs the premise that a follower will have higher level of TIL in an ideal categorized leader which will promote employee voice practices. In contrast if employees have a lower level of TIL they may not indulge in risky behaviours and remain silent which will hamper the organizations performance (Gao et al., 2011).

*Proposition 2: Trust in leaders is positively related to employee's voice practices.*

### ***Disclosure of Leader's Sexual Orientation, Trust in Leader, and Employee Voice***

Theorizing based on LCT followers have prototypical images of their ideal leaders and they implicitly assume leadership of those who fit in those prototypes. Even queer leaders under Goffman's stigma theory find themselves under the burden attached to them because of the community they belong to (Bowring & Brewis, 2009). When the stigma label is reinforced the people, themselves feel ashamed of themselves because of the attributes associated to them by others (Almack, 2007). Contrary to disclosure under the passing concept in Goffman's theory individuals try to pass as normals and tend to live dual life because of the stigma attached to it (Carnevale, 2007). Disclosure is described to have a positive effect on the holistic life of an individual. Reportedly such individuals were seen to have better interpersonal communications, self-awareness and problem-solving skills because of the disclosure (Bowring & Brewis, 2009).

This disclosure alone doesn't facilitate the whole leader-follower relationship; in fact, trust is the cement between them which ensures that both parties understand each other (Bowring, 2017). More level of TIL leads to higher productivity and employee outcomes like employee voice practices. In this study I present the view that employees feel comfortable to communicate

upwards using the voice mechanism due to lack of fear. This lack of fear is a result of higher levels of TIL. And this TIL is established because of the disclosure made by a leader regarding their sexual orientation which gives confidence to the employees to believe in their leader's abilities and see them as a prototype of an ideal leader for them.

Life of LGBTQI+ people is often defined as a conflicting position with a constant fight between coming out versus remaining behind the closet doors. This further gets intensified when a person is in a leadership position. The study by Gao et al. (2011) found that leaders are responsible for facilitating the effect of subordinates TIL. When this process is hampered, this further mitigates the positive relationship between TIL and employee voice. This suggests that trust allows vulnerability and TIL increases likelihood of employees overcoming the blurred prototype categorization due to presence of stigma and work collectively with the leader by practicing voice mechanisms. The certainty of both leader and follower belonging to the sexual minority express higher levels of perceived leader effectiveness (Wang et al., 2021).

Organizations realize that alone increasing demographic heterogeneity would not increase its effectiveness (Syed, 2014). Rather they have to focus on managing diverse groups together through promoting inclusion in the workplace. For which it is vital to fill the gap in the literature concerning the topic of discussion: that how a leader's characteristic is the primary source of trust in a leader (Hendriks et al., 2020) and how this trust in a leader can promote employee voice practices.

*Proposition 3: Trust in leaders will mediate the relationship between disclosure of the leader's sexual orientation and employee's voice practices.*

## **DISCUSSION**

Primarily this study incorporates trust and employee voice in the research field of disclosure to establish a linkage between them. While there has been prior rich work undertaken in all these fields individually no study in my knowledge has combined all the three constructs together to provide a model. The research stream has yet not explored the role of trust in a leader when a leader discloses their sexual orientation to employees and how in turn it impacts their employee voice practices. This study also extends its contribution to the theoretical world by incorporating two fresh theories in the disclosure domain.

### ***Role of India's G20 Presidency***

In light with India's G20 Presidency vision it is an optimal time to bring this topic of inclusion on the table. Not only it is the right opportunity to start discussions on social upliftment of women and child, but it is also providing a ground to put forward the discussions on stigmatic topics such as sexual orientation of a person. This especially holds relevancy in workplace reality where the organizations are witnessing paradigm shift. With time as these structural stigmas will relax the global closet is accepted to reduce drastically. Although in Indian context we do not have the concrete numbers but seeing the global trend it can be commented that world's most populous country will also witness a similar situation. Under India's G20 Presidency we can proactively start considering implications of sexual minorities coming out

of closet and the impact it could have on the workplace. This present study is a step in this direction and promote inclusion at a wider level.

### ***Theoretical and Empirical Implications***

The idea presented in this study emphasises the need to integrate the research domain of leadership and disclosures with other sub fields. The conceptual model presented in [Figure 1](#) shows the potential of the decision of disclosure of sexual orientation of a person in leadership role on its employee's outcomes. The focus of this paper was to understand employee voice practices as an outcome. For example, this conceptual model can govern the premise of disclosure versus nondisclosure of a leader's sexual orientation on employee voice practices. This is especially vital to understand the leader follower relationship which holds true in presence of shared trust. Thus, the model further incorporates trust in the leader as a mediating variable to link both disclosure and employee voice together in a relationship using two theories. Empirically the next step for this model is to convert the given proposition into hypothesis and test the model.

Coming to the theoretical implication it is very interesting to note that this paper confirms the need to dwell on building a theory in the management domain to explore this phenomenon. As in this study I had adapted a sociological theory of Goffman's stigma theory and linked it with Leader categorization theory to ground the conceptual model. Both these theories assume perception bases and govern the communication premise that takes place because of social exchanges between human beings. Here the proposed conceptual model makes an attempt to incorporate elements of social stigma like- sexual orientation in the Goffman's stigma theory for adaption to provide a new theoretical lens.

### ***Limitations and Future Directions***

This present study is limited to the premise of the three study variables and the relationship shared between them. As mentioned above, in the future researchers can consider different aspects of trust and further enrich the model. Employee voice can also be studied as promotive and prohibitive voice forms to better understand the impact of disclosure of the leader's sexual orientation on them (Arain et al., 2021). This will provide clearer understanding of the disclosure decisions. Apart from these five other future agendas for researchers to explore are as follows.

1. Introducing a moderator like gender in the model to see if the employees' gender had any role to play in the relationship.
2. Introducing other mediators like experience, leader follower relationship into the model.
3. Using the model for specific sexual minorities like queer, transgender and others to understand their impact on employee outcomes.
4. Testing the same model with different employee outcomes like work engagement, work commitment, and job performance.
5. Testing the conceptual model in a real-life scenario by converting the propositions to hypotheses.

## CONCLUSION

In this conceptual paper, I have integrated the literature of disclosure, leadership, trust, and employee voice to develop a model to establish a relationship between the previously unstudied constructs. This conceptual model collectively ideates the role of disclosure of sexual orientation specifically by an individual in power which in my case was a leader of an organization who is in a decision-making role. For contextual setting the focus here relies in understanding the relationship dynamics shared between a leader and their follower. A literature review of all the three study variables which are disclosure of a leader's sexual orientation, trust in the leader (TIL), and employee voice practices is undertaken to derive the bases of the proposed conceptual model. To theoretically bind the model together I have used two theories- Goffman's stigma theory and Leader categorization theory (LCT). Goffman's theory elaborates on the segregation created between normal and deviants in a society due to the stigma related to an individual, for the present model the stigma was referred in the sense of the sexual orientation of an individual. While the Leader categorization theory (LCT) focuses on the cognitive image of an ideal leader in a follower's mind, for the present model it is seen that trust in the leader will improve employee voice practices as they will see trust as a quality of an ideal leader. Both the theories together shed light on understanding how disclosure of leader's sexual orientation impacts subordinate's trust in leaders, and how this trust in the leaders in turn impacts employee voice. The focal point of the study was to establish a relationship to link between the three theoretically distinct constructs and the two theories which are not studied together in this context. The paper also gives three propositions to test the conceptual model in the future. These propositions are- Proposition 1: Disclosure of a leader's sexual orientation is positively related to trust in the leader; Proposition 2: Trust in leaders is positively related to employee's voice practices; Proposition 3: Trust in leaders will mediate the relationship between disclosure of the leader's sexual orientation and employee's voice practices. The integrated conceptual model here emphasized that when a leader decided to disclose sexual orientation to their employees it would increase the trust between them and because of the increased levels of trust in the leader the employees would show better employee voice practices at the workplace.

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# **To devise a model to predict the change in ‘The dominant’ Leadership style among business managers in Greater Mumbai in view of India’s Leadership at the G20 Summit 2023**

**Michael D'souza\***

**Merlyn D'souza\*\***

## **ABSTRACT**

Blake and Mouton’s Managerial Grid Model used in this research, was one of the most influential management models in the 1960s; it also provided a foundation for even more complex contingency approaches to leadership.

On December 1, 2022, India took over the Presidency of the G20 (formally known as the Group of 20) for the first time since it was founded in 1999 after the Asian Financial Crisis. India’s leadership of the G20 comes at a crucial juncture, given the ongoing effects of the Ukraine-Russia war, a deepening global energy crisis, economic slowdown, a resurging COVID risk, and the rapidly-increasing consequences of global warming. India has exhibited a ‘Team Management’ style of leadership.

Business managers, discussed in this study, are sampled to determine, the changing leadership style emerging in the coming years. Thus, what is done in the research; “To devise a model to predict the change in ‘The dominant’ Leadership style among business managers in Greater Mumbai in view of India’s Leadership at the G20 Summit 2023”, is in the full paper. The work explains dominant leadership style depending on parameters, may be computed in order to hire fresh talent at ideal levels for the future era, better equipped to steer the country ahead.

**Keywords:** *Indian service sector, Business management, G20 Summit 2023, Leadership Grid, Indian Leadership*

## **INTRODUCTION**

Robert R. Blake lectured for various universities around the world including Harvard and Oxford, provided consulting services to private industry and governmental organizations, and authored over 30 books. He received his bachelor’s degree in psychology from Berea College in 1940. One year later, he graduated with a master’s degree in psychology from the University of Virginia. He went on to earn his doctorate degree in psychology from the University of Texas at Austin in 1947. Blake is best known for his work in developing the Managerial Grid. He was also the cofounder and president of Scientific Methods, Inc. located in Austin, Texas. Jane S. Mouton obtained both her bachelor’s degree in mathematics and doctorate degree in psychology from the University of Texas at Austin in 1950 and 1957. She completed her master’s degree in psychology at Florida State University in 1951. She worked closely with Blake, refining the concepts of the Managerial Grid. She was also vice president and cofounder of Scientific Methods, Inc. In addition, Mouton taught for the University of Texas at Austin, provided

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\* *Faculty, HRM, Ph.D, IES’s Management College & Research Centre, Mumbai*

\*\* *HR-Manager, Bank of America, Mumbai*

consulting services to large American companies, and published over 10 books including *The Marriage Grid* and *Instrumented Team Learning* (Roberson, 2005).

The 18th Heads of State and Government Summit of the Group of 20 (G20) will take place in September 2023 in New Delhi, India. Under the Indian Presidency, the G20 in 2023 will focus on the theme, 'One Earth, One Family, One Future'. The theme affirms the value of human, animal, plant, and microorganisms and their interconnectedness on planet Earth and in the wider universe. The Leaders' Summit is the climax of the G20 process and the work carried out over the year through Ministerial Meetings, Working Groups, and Engagement Groups. The Indian Presidency will also spotlight Lifestyle for Environment (LiFE), with an emphasis on environmentally sustainable and responsible choices at both the individual lifestyle and the national development level, with the aim of achieving a cleaner, greener, and bluer future. The Working Groups will focus on the following tracks: agriculture, anti-corruption, culture, digital economy, disaster risk reduction, development, education, employment, environment and climate sustainability, energy transitions, health, trade and investment, and tourism (International Institute for Sustainable Development, 2023).

A model to determine the dominant of Leadership styles among young business managers during this brief period is helpful in answering the research question for this research to predict the dominant leadership style that has boomed in the G20 Summit 2023 era. Further psycho-social research to be conducted for future years ahead will help predict the future dominant Leadership style required among young business managers.

## **REVIEW OF LITERATURE**

Blake and Mouton's, 1964 research enabled them to identify the skills and abilities they believed a person should possess in order to be an effective manager. According to Blake and Mouton, 1964, a manager who has both a high concern for employees and a high concern for the task will be the most effective manager. From their research, the Styles of Leadership Survey, Blake & Mouton, 1964; was developed. This instrument rates a person's level of concern for people and production, and the result is plotted on a matrix called the Managerial Grid of Blake & Mouton, 1964. (Roberson, 2005)

The Group of Twenty (G20) comprises 19 countries (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Türkiye, United Kingdom and United States) and the European Union. The G20 members represent around 85% of the global GDP, over 75% of the global trade, and about two-thirds of the world population. The G20 Presidency steers the G20 agenda for one year and hosts the Summit. The G20 consists of two parallel tracks: the Finance Track and the Sherpa Track. Finance Ministers and Central Bank Governors lead the Finance Track while Sherpas lead the Sherpa Track after Finance Track. The G20 process from the Sherpa side is coordinated by the Sherpas of member countries, who are personal emissaries of the Leaders. Finance Track is led by Finance Ministers and Central Bank Governors of the member countries. Within the two tracks, there are thematically oriented working groups in which representatives from the relevant ministries of the members as well as from invited/guest

countries and various international organisations participate. The Finance Track is mainly led by the Ministry of Finance. These working groups meet regularly throughout the term of each Presidency. The Sherpas oversee negotiations over the course of the year, discussing agenda items for the Summit and coordinating the substantive work of the G20. In addition, there are Engagement Groups which bring together civil societies, parliamentarians, think tanks, women, youth, labour, businesses and researchers of the G20 countries. The Group does not have a permanent secretariat. The Presidency is supported by the Troika – previous, current and incoming Presidency. During India's Presidency, the troika will comprise Indonesia, India and Brazil, respectively (India Presidency at G20 2023, 2023).

A young business manager works under the supervision of other senior managers and executives in organizations. Their goal is to acquire all essential knowledge to become future senior managers, often in particular fields, such as general management or pharmaceutical management. The current study focussed on the changing Leadership styles of such young business managers. (Workable Software Limited, 2012)

A research study on Leadership styles, as defined by the hospital CEOs and their associates, analysed relative to the hospital's size and setting as well as the CEO's self-defined values, their age, gender, years of experience, and recent leadership training. It contributed to an understanding of the status of current leadership relative to the leadership needed to meet the health care challenges of the future (Janssen, 2004).

An earlier study explored the following question; if there a correlation between a person's level of existence as defined by Graves in 1970, and leadership style as defined by Blake and Mouton in 1964 (Roberson, 2005).

Yet, another research was to advance knowledge by investigating leadership styles and change styles in order to examine the underlying leadership behaviours and personal characteristics that may influence how leaders implement change in high quality programs. This research involved an investigation of production leaders in an automobile manufacturing organization recognized for the successful transformation from low quality performance levels to high quality performance levels using a TQM-oriented quality system (Norris, 2005).

However, limited study was found to validate the construct for dominant leadership style and the researcher has found none done in Greater Mumbai, India. Therefore, the purpose of this research is to extend the research gamut to include change in dominant Leadership styles among young business managers during the G20 Summit 2023 in Greater Mumbai, India. The present study is to predict future changing leadership styles using a regression formula construct of a suitable model summary.

## **RESEARCH METHODOLOGY**

The problem statement will outline the appropriate professional inference part. The findings of one study helps better define any gaps that exist between the State's current hospital leadership

and that needed to meet the needs of the State's health care organizations (Janssen, 2004). Moving forward, in the next research cited, in addressing the 66% failure rate of TQM programs in the United States, authors of quality management literature contended the major problem was a lack of leadership commitment as stated by Beer, in 2003; Marsh, Berman, & Flynn, in 2000; and Yen et al., in 2002. Deming proposed that leaders must transform prevailing managerial styles to improve their effectiveness in implementation of the extensive changes needed to optimize quality performance. In examining change management programs, Hiatt and Creasey in 2003 identified the major problem as a failure to manage the *people side* of change management (Norris, 2005). In the similar research work, using Blake and Mouton's in 1964 constructed Styles of Leadership Survey was a useful tool for selecting the candidates to fill management positions. Hiring officials will be able to pinpoint a person's management style according to the Managerial Grid. The question becomes: does this test relate to and reinforce each other as an assessment tool, which is validated in the present research as a true reinforcer (Roberson, 2005).

The G20 Summit 2023 expected to adopt a Leaders' Declaration at the conclusion of the Summit that states Leaders' commitment towards the priorities discussed and agreed upon during the Ministerial and Working Group Meetings. The current young business managers need to be groomed professionally to take on such tasks of responsibility in the near future (International Institute for Sustainable Development, 2023).

The following research questions will be answered: 1) Does dominant leadership style exist among Young business managers in Greater Mumbai, 2) Could one compare the various factors affecting personality determinants like age and specialization of work? 3) Could one make a dominant Leadership style criterion formula to compute how suitable leadership styles may be computed? The existence of dominant Leadership style, its comparison among various factors, and the devising of a model to calculate dominant personality have to be done circumspectly. The need of this study contributes to the *people-side* success factor in devising a full-proof change management transformation in young business managers in the era of the G20 Summit 2023 with India as the host. The area under analysis is chosen as young business managers because of them being the future generation to grasp peak levels of skill. The objectives of the study are thus interpreted as follows: 1) To study the dominant Leadership styles, if present among young business managers, 2) To compare the various factors dependent on dominant Leadership Style, 3) To find the main factors as the cause of dominant Leadership styles by devising a model to determine dominant Leadership styles. The following three hypotheses may be devised: ***H<sub>01</sub>***: There is no dominant Leadership styles among young business managers in Greater Mumbai. ***H<sub>02</sub>***: Dominant Leadership styles of young business managers are independent of their work specializations and gender. ***H<sub>03</sub>***: Dominant personality types used by business managers independent of their work specializations and gender may be computed. The first two hypotheses examine the existence and dependence of dominant Leadership styles among business managers in Greater Mumbai. The third hypotheses will be examining the relation between dominant personality types and the profile factors of business managers and also will construct a model to determine Leadership styles. Rejection of the three hypotheses will affirm the dependence of dominant personality type on the various parameters and will

later on indicate the need to devise a model to strengthen the dominant personality type. Then a model will be formed based on the evidences gathered till then. The data collection plan involved direct verbal correspondence with the 94 business manager participants studied. 94 business managers were given questionnaires that were filled under personal supervision in the year 2020, 2021, 2022 and 2023. The research tool used is SPSS 16.0. The literature review was exhaustively taken from online sources, ProQuest and Ebsco databases, Harvard Business Review articles, online working papers/ theses, and numerous e-articles. The insights from this vast literature helped to fragment down to basic levels of arriving at a business decision. The sample size taken was by snowball method of convenience sampling to ensure randomness. Hence out of numerous business management population of dominant leadership styles, 94 business managers were interviewed. The results were collated and represented in the sections that follow.

## DATA INTERPRETATION/ANALYSIS

Hence, from the table below around half of the total dominant leadership style (45.7%~43 out of 94 cases) in percentages have one dominant leadership style of paternalistic management. Hence, we interpret that dominant leadership styles exist among young business managers in Greater Mumbai. We thus reject Ho1, and analyze that there exists a relation between dominant leadership style as in **Error! Reference source not found.**

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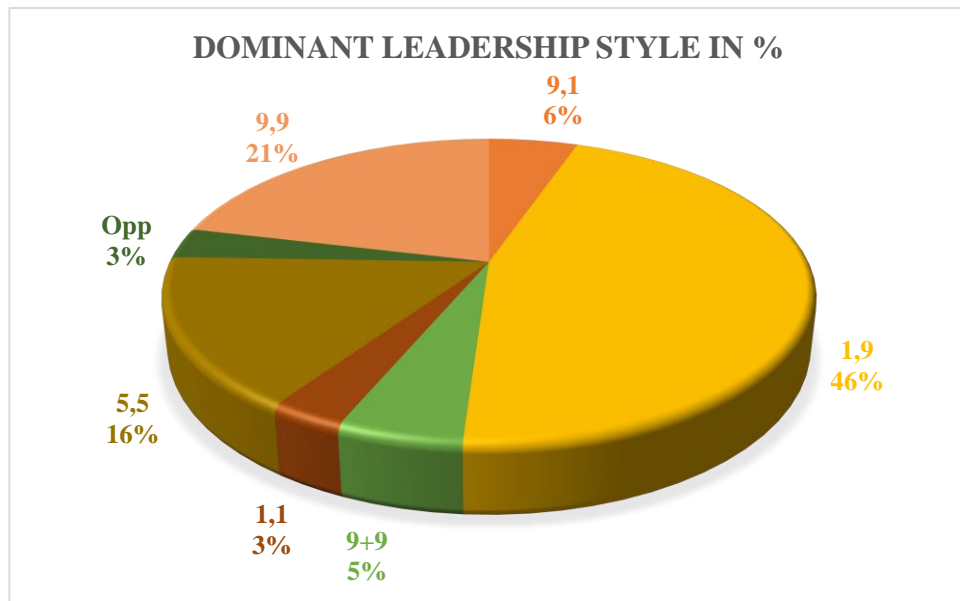
Dominant_1 * Management_Type_Cross_tabulation					
			Management Type		Total
			General management	Pharmaceutical Management	
Dominant_1	Task_mgt	Count	2	3	5
		% within Dominant_1	40.0%	60.0%	100.0%
		% within Management_Type	4.1%	6.7%	5.3%
		% of Total	2.1%	3.2%	5.3%
	CountryClub_mgt	Count	18	25	43
		% within Dominant_1	41.9%	58.1%	100.0%
		% within Management_Type	36.7%	55.6%	45.7%
		% of Total	19.1%	26.6%	45.7%
	Paternalistic_mgt	Count	3	2	5
		% within Dominant_1	60.0%	40.0%	100.0%
		% within Management_Type	6.1%	4.4%	5.3%



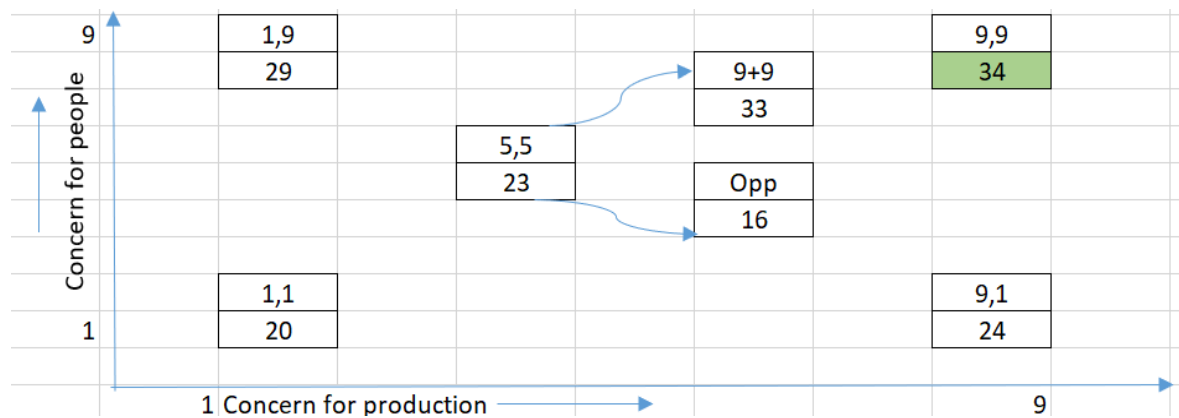
		% of Total	3.2%	2.1%	5.3%
	Impoverished_mgt	Count	1	2	3
		% within Dominant_1	33.3%	66.7%	100.0%
		% within Management_Type	2.0%	4.4%	3.2%
		% of Total	1.1%	2.1%	3.2%
	MiddleOfRoad_mgt	Count	7	8	15
		% within Dominant_1	46.7%	53.3%	100.0%
		% within Management_Type	14.3%	17.8%	16.0%
		% of Total	7.4%	8.5%	16.0%
	Opportunistic_mgt	Count	2	1	3
		% within Dominant_1	66.7%	33.3%	100.0%
		% within Management_Type	4.1%	2.2%	3.2%
		% of Total	2.1%	1.1%	3.2%
	Team_mgt	Count	16	4	20
		% within Dominant_1	80.0%	20.0%	100.0%
		% within Management_Type	32.7%	8.9%	21.3%
		% of Total	17.0%	4.3%	21.3%
Total	Count	49	45	94	
	% within Dominant_1	52.1%	47.9%	100.0%	
	% within Management_Type	100.0%	100.0%	100.0%	
	% of Total	52.1%	47.9%	100.0%	

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.320 <sup>a</sup>	6	.156
Likelihood Ratio	9.833	6	.132
Linear-by-Linear Association	6.859	1	.009
N of Valid Cases	94		
a. 8 cells (57.1%) have expected count less than 5. The minimum expected count is 1.44.			

**Dominant Leadership style of Paternalistic management 1, 9**



**Ideal Leadership style of Team management 9,9**



If R-square value is of 70% or more, then model is stronger for prediction. Here, since it is greater than 70%, we accept the model as in

Table 1: Model **Summary**. Also, P value is lesser than 0.05, so we reject Ho, that model is significant.

**Table 1: Model Summary**

Model Summary <sup>b</sup>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.290 <sup>a</sup>	.084	.053	2.073	.084	2.749	3	90	.047
a. Predictors: (Constant), Year, Gender, Management_Type									
b. Dependent Variable: Dominant_1									

**Table 2 : Coefficients**

<b>Coefficients<sup>a</sup></b>									
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	B	Std. Error
1	(Constant)	680.628	743.192		.916	.362			
	Management_Type	-1.088	.438	-.256	-2.485	.015	-.272	-.253	-.251
	Gender	-.135	.450	-.031	-.301	.764	-.021	-.032	-.030
	Year	-.334	.368	-.094	-.908	.366	-.145	-.095	-.092
a. Dependent Variable: Dominant_1									

The devised model from above table, that is, Table 2 : **Coefficients**, may be written as:

$$\text{Dominant Leadership Style} = 680.628 - 1.088 \times (\text{Management\_Type}) - 0.135 \times (\text{Gender}) - 0.334 \times (\text{Year})$$

## FINDINGS & CONCLUSION

The findings of the result claim that there exist dominant personality types among young business managers in Greater Mumbai. A model, which is not as significant or strong enough, is developed to compute the stress level, which is as under.

Dominant Leadership Style = 680.628 - 1.088 x (Management\_Type) - 0.135 x (Gender) - 0.334 x (Year). For instance, if Management\_Type is general management, gender is female, Year is 2023, then fitting it into the formula would result as values of 1 = "Task\_mgt", 2 = "CountryClub\_mgt" and 3 = "Paternalistic\_mgt", 4 = "Impoverished\_mgt", 5 = "MiddleOfRoad\_mgt", 6 = "Opportunistic\_mgt" and 7 = "Team\_mgt". The Table 3 : **Nomenclature**, defining the other nomenclatures is as follows:

**Table 3 : Nomenclature**

Heading	Nomenclature	
Management_Type	General Management	1
	Pharmaceutical Management	2
Gender	Male	1
	Female	2
Dominant Leadership Style	Task_mgt	1
	CountryClub_mgt	2
	Paternalistic_mgt	3
	Impoverished_mgt	4
	MiddleOfRoad_mgt	5
	Opportunistic_mgt	6

Here it will be as Dominant Leadership Style =  $680.628 - 1.088 \times (\text{Management\_Type}=1) - 0.135 \times (\text{Gender}=2) - 0.334 \times (\text{Year}=2023)$

That is, Dominant Leadership Style =  $680.628 - (1.088 \times 1) - (0.135 \times 2) - 0.334 \times 2023 = 3.588$ , which is closer to “4” as “Impoverished\_mgt” and “3” of “Paternalistic management”.

To, make the model stronger and more significant the study may be extended to more young business managers, and more regions other than Greater Mumbai. A similar model may be developed and it will help to enhance advocates of improving dominant Leadership styles invariably towards effective, business transformation.

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# Role of Artificial Intelligence in Amplifying Customer Engagement: A Structured Literature Review (2002-2022)

Paramjit Singh\*

Ruchika Yadav\*\*

## ABSTRACT

Artificial Intelligence (AI) technologies based on Natural Language Processing (NLP), Machine Learning, and Computer Vision, to name a few, are being rampantly deployed across all strategic pillars of Omnichannel Marketing Strategy including Customer engagement and Customer Relationship Management. It is an overpowering case to understand and delve deeper into the symbiotic relationship between a marketer and evolving role of AI in engaging customers. This paper aims to examine the role of Artificial Intelligence in Customer engagement using scientometric analysis for Scopus-indexed articles for 2 decades and identify major future research directions. The author has used the Bibliometrix package of R-Studio and VOS Viewer to analyze 328 unique articles on AI and Customer engagement for the period 2002 to 2022. As per the author's knowledge this will be the first bibliometric study on the impact of Artificial Intelligence in Customer Engagement which will be catering to business and management domains. Keyword analysis shows that AI, Chatbots, Customer experience, and customer satisfaction are the most relevant keywords in the research domain of AI and Customer Engagement. Further, the results highlight source analysis, Bibliographic coupling of Journal Analysis, Author and document citation analysis, and thematic maps elucidating emerging themes and motor themes in this area. Researchers and marketing practitioners can use the comprehensive findings of this paper to expand their understanding in the realm of AI and Customer Engagement and can be used as a reference point to advance translational research.

**Keywords:** *AI, Artificial Intelligence, Customer Engagement, Customer Experience, Biblioshiny, VoS Viewer, Customer Loyalty, Service Marketing*

## INTRODUCTION

As defined by McCarthy, Minsky, Rochester, and Shannon (1955), artificial intelligence (AI) is the capacity of machines to do activities normally requiring human intelligence. Although marketers in this field frequently focus on how people respond to artificial intelligence and how it is deployed, the ramifications of the fourth industrial revolution might be far-reaching (Syam & Sharma, 2018). That "every aspect of learning or any other feature of intelligence can, in principle, be described so precisely that a machine can be made to simulate it" (McCarthy et al., 1955, p. 1) is central to the field of artificial intelligence. According to research conducted by Huang and Rust in 2018, AI may be broken down into four distinct types: social robots, propensity modeling, content generation, and mechanical or automation. Recent years have seen a rise in both theoretical and applied interest in the idea of customer engagement (CE) in service organizations, as shown by works like Brodie et al. (2011) and Kumar et al. (2019). CE is considered as fundamental to a company's success since engaged customers are more likely

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\* *Research Scholar, School of Management and Commerce, K.R. Mangalam University, Gurugram*

\*\* *Professor, School of Management and Commerce, K.R. Mangalam University, Sohna Road, Gurugram*

to back product innovation, spread the word about the firm, and be loyal to the brand (Hollebeek et al., 2016; Kumar et al., 2019).

More and more individuals are evaluating the quality of research in many fields using bibliometric criteria. Previous studies have used bibliometrics to give a broad overview of the research field, including analyses of top researchers, nations, and institutions (Podsakoff et al., 2012; Landstrom et al., 2012; Fagerberg et al., 2012); management (Merigó and Yang, 2015); entrepreneurship (Landstrom et al., 2015); and accounting (Merigó and Yang, 2015). Although bibliometric approaches are primarily concerned with statistics, they may also result in emotional understanding. When it comes to assessing a large number of articles, bibliometric approaches are simpler to utilize than peer review. To identify current and emerging patterns that are critical to the development of the subject, the authors of this research used bibliometric analysis to examine papers on CE.

Therefore, this study's major objective is to provide answers to the following questions:

Q1. Where is CE research taking place right now?

What potential research topics haven't been considered yet and may be recommended for this field's future study?

"A customer's [...] voluntary investment of focal operant resources (such as cognitive, emotional, behavioral, and social knowledge/skills) and operand resources (such as equipment) in brand interactions," Kumar et al. write in their literature review and rationale for the study (2019, p. 141). To paraphrase Brodie et al. (2011), page 260: "CE is a psychological state that results from interactive, co-creative customer experiences with a focal agent." Value co-creation in service encounters is a fluid, iterative process. A nomological network that controls service interactions is centered on CE. Participation and loyalty are two more social concepts that are repeated CE processes' causes or impacts. It is a complex notion with several components that may be represented in a variety of ways based on the circumstances and/or the parties involved.

"The level of a customer's motivational, brand-related, and context-dependent state of mind, marked by specific levels of cognitive, emotional, and behavioral activity in brands," according to Hollebeek (2011, p. 785). According to a study by van Doorn et al. (2010), how a company interacts with its customers can have positive or negative effects on the company, the environment, and the people involved. Due to this, companies must influence their clients' behavior. This is so because, as Pansari and Kumar (2017) note, a company's marketing activities are successful when they result in increased consumer involvement. Engagement among customers has been associated with positive outcomes for the business. Van Doorn et al.'s CE behaviors (2010, p. 254) are "a customer's behavior that has a brand or firm focus, goes beyond a purchase, and is caused by motivational drivers."

By examining the connections between customer contact and new technology, specialists have recently widened the scope of their research of CE. Jessen et al. (2020) examined the relationship between CE and augmented reality, while Hollebeek et al. (2021) examined the relationship between CE and autonomous service exchanges and artificial intelligence.

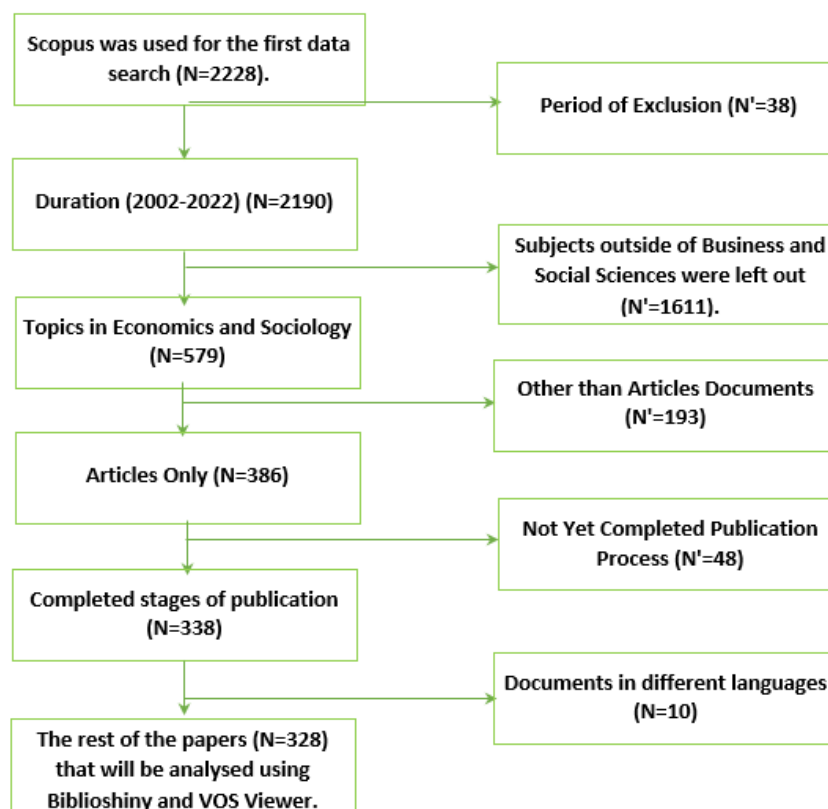
Recent research has shown how crucial it is that social media marketing strategies align with the concept of consumer participation. Li, Larimo, and Leonidou (2020) discuss this shift in practice in their work. Businesses that wish to utilize social media strategically, according to academics, "should take deliberate initiatives to motivate and empower customers to maximize their engagement value and yield superior marketing results" (Li et al., 2020, p. 4).

Based on the findings we've discussed so far, the authors were able to determine the most crucial areas for bibliometric analysis of research on AI and CE in the business and social sciences using the Biblioshiny and VoSviewer software packages. In order to identify areas that can benefit from more research, this study will examine current trends in the industry. This publication should help researchers understand current trends in AI and CE research and identify potential areas for further investigation. The study methodology will be thoroughly detailed in the text's next section.

## METHODOLOGY

The authors utilized the PRISMA methodology to collect data in an organized manner using selection criteria spanning the years 2002 to 2022 as shown in Figure 1. For the subsequent phases, only documents pertaining to business, management, and the social sciences were maintained. Additionally excluded were pieces that weren't published or that were written in a language other than English. 328 records were located under the restrictions, and a bibliometric analysis of the articles was also carried out to satisfy the objectives of the present research project and determine the potential directions for future research.

*Figure. 1. Prisma Model*



## DOCUMENT ANALYSIS

Table 1 provides a thorough overview of 328 papers chosen for examination and published in 184 publications. Each publication had an average of 21.77 citations, and there were on average 3 writers working together on each piece in this specific field of study. More research is desperately needed in this field, as seen by the yearly growth rate of 24.14% in the number of publications produced on this topic. A high degree of author cooperation is evident from the fact that 87% of all documents are multi-authored.

The year 2022 saw the publication of the most publications (98), a sign of the researchers' increased interest in this field, especially after COVID-19. The ability to anticipate consumer needs and adapt business tactics as a result gives CRM experts, product managers, and marketers a distinct competitive edge.

**Table 1: Document Analysis**

Description	Results	Year	Articles
Timespan	2002:2022	2002	2
Sources (Journals, Books, etc)	184	2004	1
Documents	328	2005	3
Average citations per document	21.77	2006	1
Average citations per year per doc	6.67	2008	5
References	19912	2009	2
Keywords Plus (ID)	1133	2010	5
Author's Keywords (DE)	1179	2011	2
Authors	901	2012	3
Authors of single-authored documents	44	2013	5
Authors of multi-authored documents	857	2014	1
Single-authored documents	44	2015	3
Documents per Author	0.364	2016	3
Authors per Document	2.75	2017	7
Co-Authors per Documents	3	2018	11
Collaboration Index	3.02	2019	32
		2020	55
		2021	89
		2022	98
<b>The annual growth rate of articles is 24.14%</b>			

### *Most Prolific Authors*

Prentice C ranked first with 5 articles, while MouJ followed with 4 publications as shown in Table 2. It is interesting to note that Brandtzaeg Pb and following 12 authors had 3 publications each.



**Table. 2: Most Prolific Authors**

Authors	Articles	Articles Fractionalized
PRENTICE C	5	2.17
MOU J	4	0.90
BRANDTZAEG PB	3	0.83
CHENG X	3	0.70
CHOY KL	3	0.75
FØLSTAD A	3	0.83
GUPTA S	3	0.95
HO GTS	3	0.75
KIM H	3	1.00
SHIN D	3	0.83

***Most productive organizations***

As can be shown in Table 3, the top three productive affiliations in the field of artificial intelligence and consumer interaction are the Hong Kong Polytechnic University, the Queensland University of Technology, and the Hong Kong Polytechnic University.

**Table 3. Most Relevant Affiliations**

Affiliation	Articles
HONG KONG POLYTECHNIC UNIVERSITY	14
QUEENSLAND UNIVERSITY OF TECHNOLOGY	10
THE HONG KONG POLYTECHNIC UNIVERSITY	10
UNIVERSITY OF TECHNOLOGY SYDNEY	9
UNIVERSITÉ DU QUÉBEC À MONTRÉAL	9
HAINAN UNIVERSITY	8
NOTREPORTED	8
SWINBURNE UNIVERSITY OF TECHNOLOGY	8
GRIFFITH UNIVERSITY	7
IMPERIAL COLLEGE LONDON	7

***Source Analysis***

Table 4 lists the top 10 AI and Customer Engagement periodicals that routinely publish impactful papers. Source analysis may assist researchers locate journals that publish research in a certain field, according to Park (2017). This helps them organize their suggestions. Academics may decide where to submit their work by checking at journal frequency and content. This strategy is utilized in bibliometric research to locate high-impact publications (Bornmann & Daniel, 2008).

Each journal provided 9.4 percent, for a total of 28.2 percent, although the largest contributor was Journal of Business Research (9.4 percent). There are eleven publications on artificial intelligence and consumer interaction in these journals dating back 20 years.

AI and customer interaction sources have written on policy, business procedures, service innovation, and data. Due to the paradigm shift, the authors believe AI and customer engagement-based research should be expanded to address a wide variety of challenges in other industries. Researchers may examine their study on automating customer engagement, real-time marketing, emotional intelligence, and CRM's practicality.

**Table 4.: Top ten sources in the domain**

<b>Journal Name</b>	<b>No. of Publications</b>
Journal Of Business Researches	11
Journal Of Retailing & Consumer Services	11
Sustainability (Switzerland)	11
International Journal Of Production Researches	8
International Journal Of Bank Marketing	7
Applied Marketing Analytics	6
Decision Supports Systems	6
Journal Of Services Management	6
Journal Of Services Researches	6
Electronic Markets	5

### **Bibliographic Coupling**

Figure 1 Bibliographic coupling analysis was first proposed in the 1963 research paper "Bibliographic coupling between scientific papers" by M.M. Kessler. This method uses the frequency with which two documents are cited together in other publications as a proxy for their level of relatedness. Since then, researchers have used this method to analyze the significance of articles and determine the connections between texts. Kessler's study paved the way for the emerging subject of bibliometrics, which is concerned with the statistical evaluation of academic and scientific publications.

Based on the authors' common references, Figure 2 depicts the relationships between various sources (journals) as determined by bibliographic coupling analysis (Liu and Li, 2015). This technique enables scholars to identify the sources that are most closely related to a certain topic by examining the bibliometric relationships between them. Research on bibliographic coupling identifies the relationships between periodicals that authors often quote one another. The visualization in Figure 4 supports what has been said about consumer interaction and AI in many journals. According to Li and Ding (2011), the size of a circle in the picture indicates how relevant and significant a certain magazine is to a field. The publication is more significant and influential in the subject area the larger the circle.

**Figure 2. Bibliography coupling of journal (source) analysis**

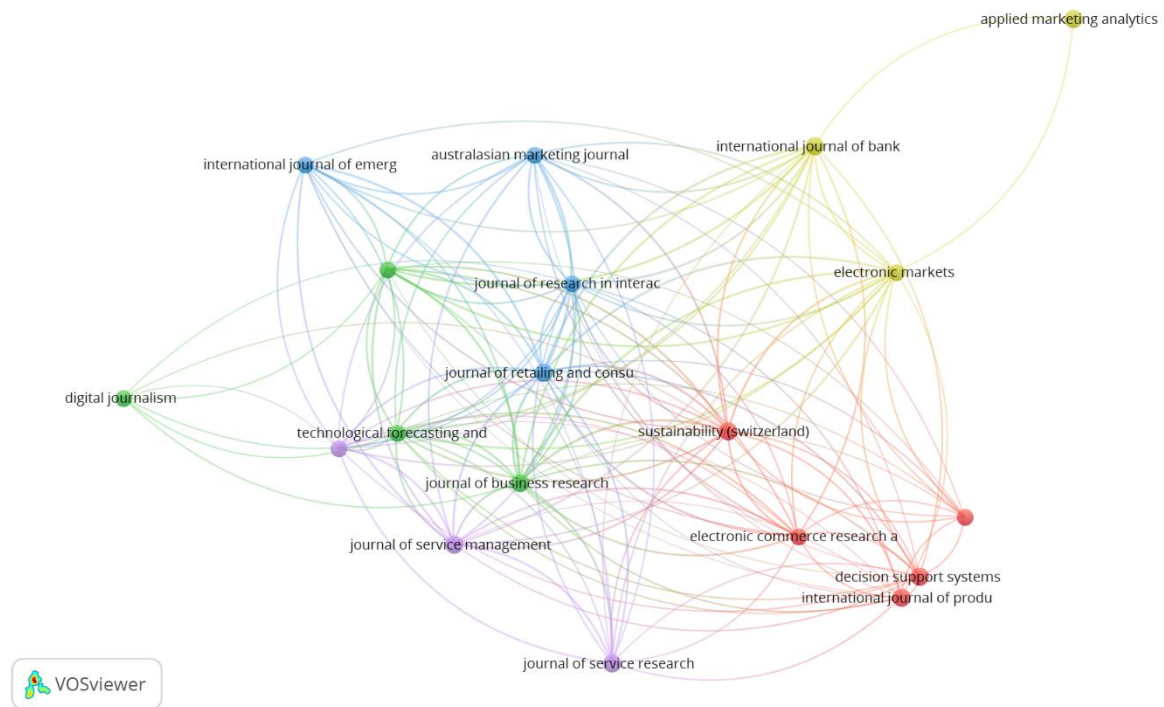


Table 5 adds to what was discussed concerning paper grouping. Common subjects emerged from the way the journals in Figure 2 referenced the same sources. Decision Support, Service Management, Behavior-based, Business Research, and Marketing Analytics were chosen based on how frequently the same things were published about AI and customer interactions in the same publications.

**Table 5. Bibliographic coupling of the sources**

No.	Clusters	Journals
1	Decision Support based themes (Redcolor)	Knowledge-Based Systems, Sustainability (Switzerland), International Journal of Production Research, Electronic Commerce Research and Applications, Decision Support Systems, and the International Journal of Production Research.
2	Service Management Based themes (Purplecolor)	Publishing in the Journals of Service Management, Service Research, and Services Marketing
3	Behaviour based themes (BlueColor)	Journal of Retailing and Consumer Services; Journal of Research in Interactive Marketing; Journal of Retailing; Australasian Marketing Journal; International Journal of Emerging Markets
4	Business Research based themes (GreenColor)	Journal of Electronic Publishing, Business Research, Journal of Psychology and Marketing, Technological Prediction and Social Change, and Journal of Business Research
5	Marketing Analytics based themes (YellowColor)	Journal of Bank Marketing, Electronic Markets, and Applied Analytics in Marketing

### *Author and document citation analysis*

This section focuses mostly on the examination of author and document mentions, which is an essential component of bibliometric analysis. Citations are references to written works, whether public or private, that discuss the contributions of other writers. The number of citations a piece of academic writing receives is often used to evaluate it (Cavalcante et al., 2021; Bornmann & Daniel, 2008).

The top 10 articles read worldwide are shown in Table 6. Huang M.-H.'s article "Artificial Intelligence in Service" plus Rust R.T. (2018) has received 719 citations worldwide. The author examines the four categories of intelligence—mechanical, analytical, intuitive, and empathetic—that are being developed to make AI effective in service. In this stage-by-stage process, jobs that are mechanical, logical, and natural will be replaced. Since it's challenging for computers to replicate emotional intelligence and empathy, people with these skills will be in high demand. The author believes that AI will replace jobs in a way that depends on how important each job is in terms of intelligence.

The article "Building Dynamic Capabilities for Digital Transformation: An Ongoing Process of Strategic Renewal" was the second most referenced with 387 total references. Wager, M., & Warner, K.S.R. (2019) investigated how traditional firms build flexible capacities for digital transformation by using emerging digital technologies to enrich customer experiences, simplify operations, and create novel business models. The authors argue that there is a lack of study on the implications of using the term "digital transformation" in different circumstances. The nine microfoundations of the process model were derived through interviews with senior executives. This shown that adaptability is crucial to the ongoing process of renewing the business model, collaboration strategy, and company culture of an organisation. Kiss C. Bichler M. (2008) examined using 282 linkages how the significance of consumers might be leveraged to identify industry leaders and spread the word via focused social media marketing initiatives. Dale R. (2016) cited 213 sources to describe the condition of bots and voice-activated digital assistants, which are not simply restricted to talking technology, including Amazon's Alexa, Apple's Siri, and the Google Assistant. Bots may be designed to do certain tasks, such ordering pizza, making online purchases, and booking tickets. There were 211 mentions of the work by Luo X. et al. The author examines the effectiveness of people and robots in their occupations by calling clients to make sales. Chatbots were found to be more productive and efficient than untrained personnel, however, purchase rates and call duration significantly decreased after the bots' actual identities were made public. This shows that users believe bots to be less intelligent and compassionate than people. This research may assist developers of AI chatbots create strategies on how to target customers and encourage them to engage with their bots.

Then comes Huang M.-H. and Rust R.T. (2021) which provides a framework for a plan for the use of AI in service to connect consumers and has 157 citations. The author examines how Mechanical AI may be used to perform regular, repetitive, and transactional duties that are often a component of back-end operations and service offerings. The framework goes from Mechanical AI to Thinking AI to Feeling AI in order of how well it works. Thinking AI should be utilized for tasks that need the capacity to infer and evaluate, like reworking existing ones

or launching brand-new ones. I think it's important to use AI for customer care and engagement when consumers may benefit much from personal attention, and when service jobs need more conversation and contact.

According to Sergi BS and Popkova EG. According to the study's findings, social companies may gain from Industry 4.0, but they won't use as much technology as for-profit ones. Identify the role of human interaction and AI in social business (human intelligent decision support) by the year 2020.

**Table 6. Most cited Documents and Authors**

Authors	Title	Source Title	Citations
Huang M.-H. and Rust R.T. (2018)	Artificial Intelligence in Services	Journal of Service Research	719
Warner K.S.R. and Wäger M. (2019)	Buildings dynamic capabilities for digital transformations: An ongoing process of strategic renewal	Long Range Plannings	387
Kiss C. and Bichler M. (2008)	Identifications of influencers - Measuring influences in customers network	Decision Supports Systems	282
Dale R.(2016)	The return of the chat bots	Natural Language Engineering	213
Luo X. et al. (2019)	Frontiers: Machines vs. humans: The impacts of artificial intelligences chatbot disclosure on customers purchases	Marketing Science	211
Popkova E.G. and Sergi B.S. (2020)	Humans capitals and AI in industries 4.0. Convergence and divergences in social entrepreneurship Russia	Journal of Intellectual Capital	178
Huang M.-H. and Rust R.T. (2021)	Engaged to a Robot The Role of AI Services	Journal of Service Research	157
Mounce S.R. et al. (2010)	Developments and verifications of an online artificial intelligences system for detections of bursts other abnormals flow	Journal of Water Resources Planning and Management	157
Androutsopoulou A. et al. (2019)	Transforming the communications between citizens and governments through Artificial Intelligence guid chatbots	Government Information Quarterly	150
Hoyer W.D. et al. (2020)	Transforming Customer Experience Through New Technologies	Journal of Interactive Marketings	138

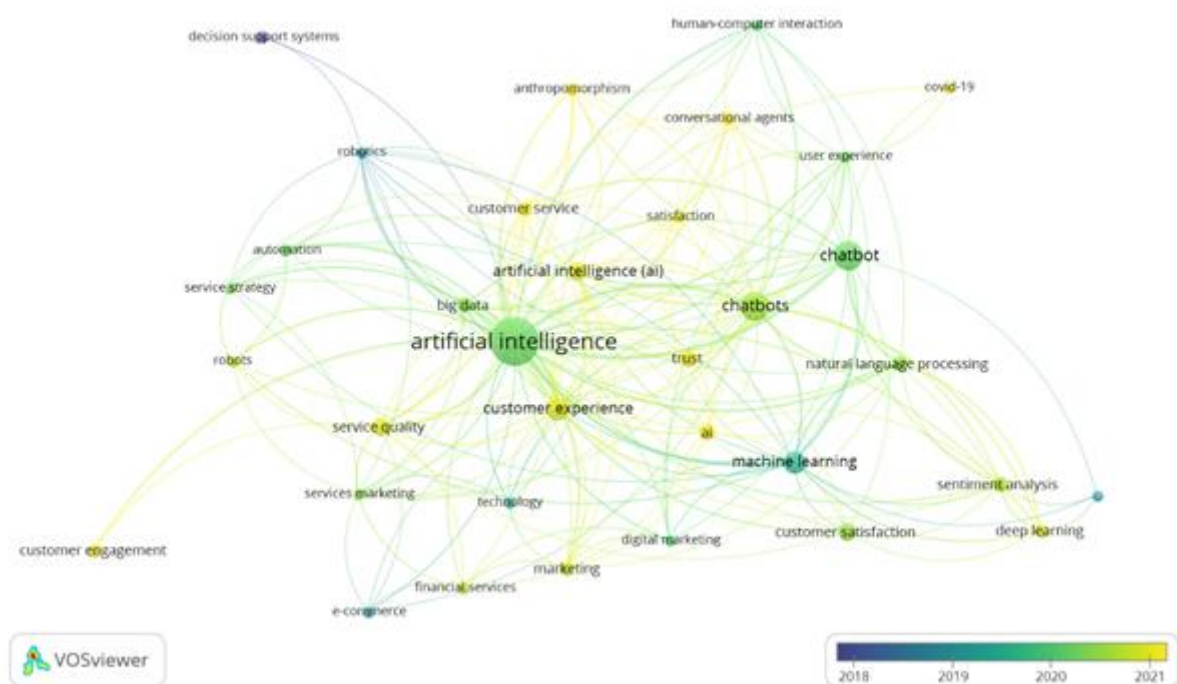
### Keyword Analysis

This section of the paper examined prior researchers' search keywords. Overlay visualization output was used to identify the researchers' previous year's research interests as depicted in Figure 3. This research referenced Scott and Lane (2000) and Sidorova et al (2008).

Figure 5 visualizes the most frequent author keyword used to discover shared research interests. The circle's radius shows the term's significance and frequency, while the connecting lines indicate where the author has used other keywords. 34 of 1149 keywords found by VOS Viewer had at least five occurrences, the minimum threshold. This analysis found that AI, chatbots, customer experience, and customer satisfaction are the most important keywords for AI and customer engagement. Technology, Machine Learning, and Digital Marketing are all connected to "customer experience," whereas "service quality" and "artificial intelligence" are related to "trust" and "engagement," respectively.

"E-commerce technology" and "robotics" were highlighted in 2018. 2019's biggest trends were machine learning and e-commerce. Big data, automation, and artificial intelligence were growing issues in 2020. Anthropomorphism, chatbots, conversational agents, and artificial intelligence dominated research in 2021.

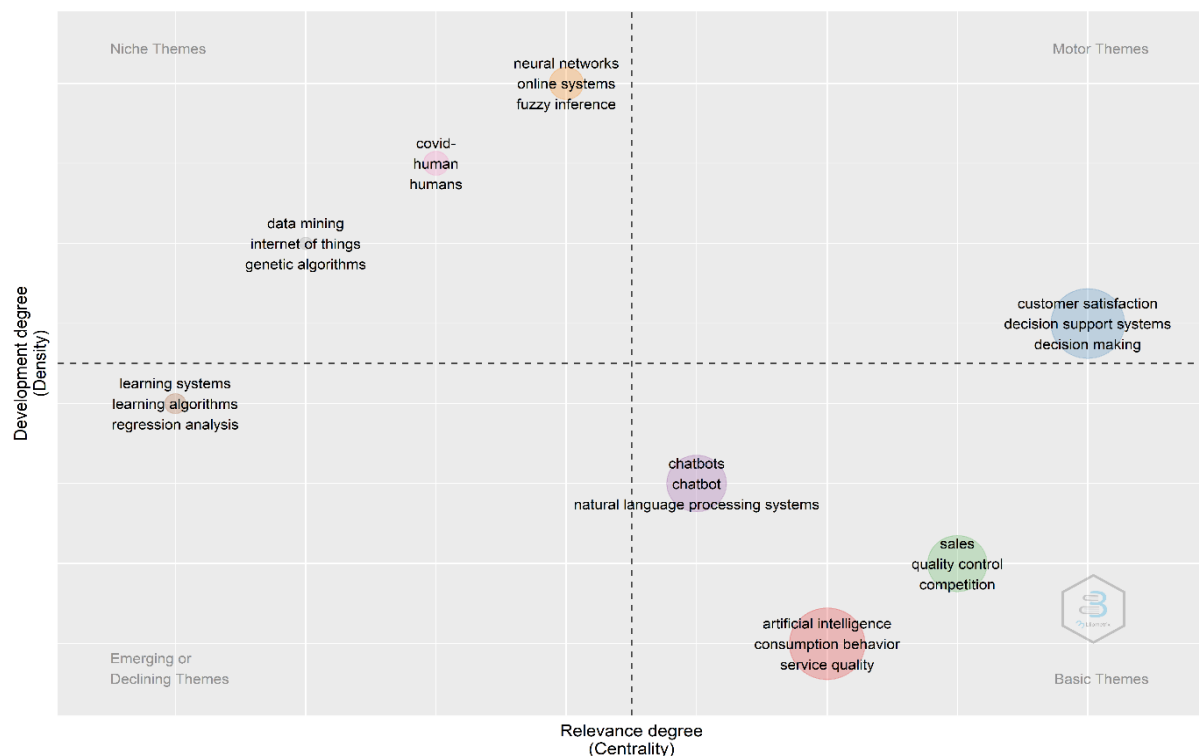
**Figure. 3. Network visualization of authors' keywords using VOS viewer**



### Thematic Map Analysis

For the years 2002 through 2022, the Biblioshiny package of R Studio is used to generate thematic maps that showcase the emergence of different types of topics. In the Keyword Plus field, 310 keywords were utilized, with a minimum cluster frequency of 6 and a maximum of 3 names per cluster. The KeywordPlus field puts in keywords that the authors missed while

looking at the names of all the sources. The KeywordPlus field now more closely resembles the



author's keywords. The use of Keyword Plus reveals the depth and significance of the narrative.

The importance of selecting a theme is shown on the X-axis, while the density on the Y-axis illustrates how the theme map in Figure 4 has evolved over time.

**Figure. 4. Theme Map**

The four quadrants of the theme map are as follows:

### **1) Upper Right Side Q1**

Because they are both central and dense, the most significant and evolving topics are placed here. It will be quite fascinating to watch how AI influences customer engagement and consumer pleasure. "Customer Satisfaction" is a definite subject that is emerging, and it encompasses several terms like "Decision Support Systems, Decision Making, Costs, Supply Chains, and Optimization."

### **2) Upper left quadrant Q2**

'Niche themes' are in-depth research subjects that aren't particularly prevalent in the area at the moment. Data mining, COVID, and neural networks are some of the techniques that researchers look at when they examine AI and consumer contact. Internet of Things, genetic algorithms, and software testing were some of the keywords in the data mining subject, while "online systems," "fuzzy inference," "artificial neural network," and "customer services" were some of the keywords in the neural networks theme.



### 3) Lower left corner Q3:

‘Growing themes’, Display topics that are ending or changing. A new area of study called "Learning Systems" contains concepts like "Learning Algorithms, Regression Analysis, Support Vector Machines, Decision Trees, and Natural Languages."

### 4) Lower Right Quadrant Q4:

‘Fundamental themes’, that cut across significant or fundamental study topics are known as basic themes. These topics are not well covered (internal links). There are three major themes that can be identified based on how the terms are arranged: "Artificial Intelligence," "Chatbots," and "Sales." The terms "Consumption Behavior, Service Quality, Electronic Commerce, Robotics, Surveys, Perception, Retailing, Marketing, Technological Development, Automation, etc." demonstrate the first theme of AI. The third main theme is sales, which includes "Quality Control, Competition, Commerce, Design, Quality of Service, Technological Advancement, Data Acquisition, and Data Privacy" as terms. The second group of chatbots also includes some significant terms like "Natural Language Processing Systems, Students, Human-Computer Interaction, Conversational Agents, E-Learning," etc.

As shown in Table 7 there are 3 clusters representing basic themes i.e. Artificial Intelligence, Chatbots and Sales, 3 Niche Themes i.e. Covid-19, Data Mining and Neural Networks, one emerging theme of Learning Systems and customer satisfaction as Motor Theme.

**Table 7. Themes and keywords in the thematic map**

Theme	Representati on as Clusters	Clustering Terms
Basic Theme	Artificial Intelligence	Terms such as "artificial intelligence," "consumer behaviour," "service quality," "e-commerce," "robots," "surveys," "perception," "retail," "marketing," "technology advancement," "automation," "customer experience," "digital technologies," "the service sector," "shopping activity," "sustainable development," "business development," "digitalization," "innovation," "intelligent robots," "technology adoption," "anthropomorphism," "Australian banking
Basic Theme	Chatbots	Words and phrases like "chatbot," "Natural Language Processing Systems," "students," "human computer interaction," "conversational agents," "E-Learning," "Education Computing," "Knowledge Based Systems," "Software Engineering," "Application Programmes," "Behavioural Research," "Customer-Service," "Machine Learning," "Natural Language Processing," "Purchases," "Trust," "Agility," "Application In Education," "Crowdsourcing Systematic literature review, software applications, personalised service, management, and virtual reality



Theme	Representati on as Clusters	Clustering Terms
Basic Theme	Sales	Terms like "reverse logistics," "semiconductor device manufacturing," "social media," "social media analytics," "software prototyping," "quality control," "competition," "business," "design," "level of service," "technology advancement," "data collection," "data privacy," "healthcare," "manufacturing process," "quality assurance," "resource allocation," "sentiment analysis," "online social networking," "customer demands," "decision makings," "forecasts," and
Emerging/ Declining Theme	Learning Systems	Regression Analysis; Support Vector Machines; Decision Trees; Natural Language Processing; Learning Algorithms;
Motor Theme	Customer Satisfaction	Money, Supply Chains, Customers, Decision Making, DSS, and Optimal Results Manufacturing, Product Design, Product Development, Production Engineering, Integer Programming Algorithms, Swarm Intelligence, Ant Colony Optimisation (ACO), Customer Loyalty, Customer Requirements, Decision Makers, Decision Supports, Design/Methodology/Approach, Economics, Competitive Environment, Bayesian Networks, and Scheduling. Topics covered include: heuristic algorithms, management, production, marketing strategies, and electric utilities. Functions with an aim, optimisations with several objectives, and optimisations Project management, process control, and particle swarm optimisation Transport vehicles, storage facilities, web browsers, statistical testing, management, public relations, the rollout of quality control functions, riveting, the service sector, and cutting-edge technological developments like text mining and time series analysis.
Niche Theme	Covid-19	CoV-19, Sars-CoV-2, Intelligent Systems, Transportation, Humans, Article
Niche Theme	Data Mining	Software Testing, Genetic Algorithms, the Internet of Things, and Data Mining
Niche Theme	Neural Networks	Topics including artificial neural networks, customer service, databases, fuzzy logic, numerical models, performance metrics, time frames, and neural networks are discussed. Internet, Water Networks, and Water Distribution Systems

### ***Country Collaboration***

This section includes the top AI and consumer interaction research countries. Table 8 show that China (120), USA (113), UK (78), India (74), and Australia (64) are the top five countries for scientific production. China and the US led the ranks with 13.36% and 12.58% of the total publication, respectively, contributing 50% of the total.

**Table 8.: Country scientific production**

<b>Country</b>	<b>Article production</b>
CHINA	120
USA	113
UK	78
INDIA	74
AUSTRALIA	64
SOUTH KOREA	40
SPAIN	36
GERMANY	32
MALAYSIA	26
FRANCE	22

## **DISCUSSION**

Due to the COVID-19 pandemic, AI and consumer interaction research has accelerated. This section summarizes and analyzes it. Several AI and consumer interaction research themes emerged from the study. Since there are few relevant papers in bibliometric databases, the authors say there is much to learn about this area. The paper indicates that AI and consumer interaction research is still in its early phases and that more research is required to fully understand this industry. This research may provide ways to enhance the company's customer contact approach. A method to evaluate how AI influences customer management might solve difficulties for customers, marketers, and external/internal stakeholders.

Future research should fix the present study's flaws. For instance, the study only looked at English-language articles, neglecting publications in languages like French, Spanish, and Chinese that may have supplied helpful information on AI and consumer engagement. The study restricted its bibliometric data to business management and social sciences, enabling other sectors to do comparable investigations. Future research may employ more databases to obtain bibliometric data from Scopus databases.

## **CONCLUSION**

The study's emphasis on artificial intelligence and customer interaction as technology and research has an impact on service providers, politicians, marketers, consumers, and academics. Current research on this topic has focused on service quality, quality control, and chatbots, but the authors suggest adding marketing, customer relationship management, ChatGPT, conversational agents, and artificial intelligence. They advise future scholars to concentrate on behavioral, marketing, and societal issues rather than technological ones. Future scholars may use the study's agenda.

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# Green Building: The Impact of Humanity on the Environment

Iram Tanvir Shaikh\*

## ABSTRACT

In 2008, National Action Plan for Climate Change (NAPCC) was launched outlining the multi-pronged, long term strategies to address climate change and its impacts. Green structure, also known as sustainable or eco-friendly structure incorporates various principles and strategies such as energy effectiveness, water conservation, use of sustainable supplies, waste reduction, and better-quality indoor air with an objective to minimize negative environmental impacts while maximizing the health and well-being of inhabitants. It not only provide the advantage to the environment but also offer long-term cost savings through reduced energy and conservation expenditures. Overall, green structure plays a vital role in recommending a more sustainable and resilient built environment, addressing climate change, and creating healthier and more livable communities.

**Objective of the study** is to assess & estimate awareness, perception, knowledge, barriers and challenges of green building, the impact on energy consumption reduction, water conservation, the indoor air quality and cost saving along with understanding of features and certifications and advance practices.

**Methodology:** This study is descriptive and the finding will be based on the evidence gathered from Questionnaire (Google form). It is a mix of Qualitative and quantitative data. The majority of the respondents are the Architects and engineers. The study will include secondary data also.

**Key Words:** *Green Building, sustainable development, energy efficiency, water conservation, innovative practices.*

## 1. INTRODUCTION

Since several decades India has witnessed a rapid urbanization. As per to Census 2011, people living in metropolitan region are about 37.7 crore covering approximately 31% of the total population. The city population is estimated to raise to about 60 crores by 2031. Metropolises which are considered as growth engines are the major contributors India's Greenhouse Gas (GHG) emissions.

In 2008, National Action Plan for Climate Change (NAPCC) was launched outlining the multi-pronged, long term strategies to address climate change and its impacts.

As a part of National Action Plan for Climate Change, National Mission on Sustainable Habitat aims at:

- i) Promoting low-carbon urban growth towards reducing GHG emanations intensity for achieving India's NDC, and
- ii) Construction resistance of cities to climate change impacts and strengthening their capacities to 'bounce back better' from climate related extreme events and disaster threats.

\* I/c Director, Aruna Manharlal Institute of Management and Research (MMS), Mumbai

The reviewed NMSH has recognized five thematic areas, namely

- i) Energy and Green Building,
- ii) Urban Planning, Green Cover and Biodiversity,
- iii) Mobility and Air Quality,
- iv) Water Management, and
- v) Waste Management.

This study will emphasis on the first thematic area i.e. Green Building which will fulfill the idea of “Sustainable Habitat”.

Sustainable Habitat” is defined in NMSH 2.0 as “an approach towards a balanced and sustainable development of the ecosystem of habitat which offers adequate shelter with basic services, infrastructure, and livelihood opportunities along with environmental and socio-economic safety including equality, inclusiveness and disaster-resilience”.

Housing and buildings that are considered as India’s economy and growth escalators has direct impact on the quality of life. According to India Habitat III National Report 2016, 8% of GDP is employed through the construction sector of India with 12% of the total labor force (Source: India Habitat III National Report, 2016).

It is very crucial to mainstream and implement retrofitting of climate adaptation measures in the building sector after the rise in the occurrence of life-threatening events, such as floods, coastal flooding, storm surges, etc. Various guidelines and regulations has been drafted to promote sustainability and address climate change impacts still there is a great need to structure various approaches and mechanisms in the existing city-level frameworks with regards of implementation, monitoring, and verification protocols. Moreover, the knowledge gaps at various levels, issues related to enforcement and implementation, high upfront cost of green technology, and limited technological development are some challenges prevailing in the sector.

### ***1.1 Green buildings:***

Green buildings are those structures that are designed to escalation energy effectiveness and to improve eco-friendly excellence. It also gives a healthier environment for the inhabitants and the community.

Green building includes features such as:

- a. Energy-efficient plan and projects
- b. Recycled ingredients and supplies
- c. Reduced embodied energy and emissions through energy conservation measures.

Green buildings can help in reducing energy consumption, water usage, waste generation through widespread reprocessing and reusing. Green Building practices not only help in protection of the ecosystem and biodiversity, but also lead to better air quality, enhanced

daylight, leading to lower electricity consumption, superior health and well-being, and enriched productivity in comparison to commercial buildings.

### ***1.2 Benefits of Green Buildings:***

- The green building helps in reducing the carbon footprint i.e. CO<sub>2</sub> emissions by decreasing energy consumption and waste generation.
- The green building helps in reducing water consumption by using rainwater harvesting or even distillation technology if necessary.
- The green building helps in reducing waste generation.
- Green buildings are provided discounts through the State Government, The Ministry of Environment, Forest and Climate Change and Government of India. They offers advanced environmental approval for green building projects which are pre-certified or conditionally certified by The Indian Green Building Council.

### ***1.3 Green Building requirements:***

- LEED (Leadership in Energy and Environmental Design) is the most popular green construction and rating system in the world. It provides standards and guidelines to encourage the adoption of sustainable construction methods.
- BREEAM (Building Research Establishment Environmental Assessment Method)
- GRIHA (Green Rating for Integrated Habitat Assessment) is a system for assessing green buildings. It was adopted in 2007 as a national standard for green structures by the Government of India.

### ***1.4 Green building practices have a significant impact on India in several ways:***

- Environmental Impact
- Energy Savings
- Health and Well-being
- Economic Benefits
- Policy and Regulatory Influence
- Climate Change Mitigation

Overall, green building practices have a transformative impact on India by promoting sustainable development, conserving resources, improving occupant health and well-being, fostering economic growth, and contributing to the country's climate change mitigation efforts. They are instrumental in creating a more sustainable and resilient built environment and shaping India's path towards a greener future.

### ***1.5 Introduction of the study:***

This study was thus conducted to understand the green building practices which can help in more sustainable livelihood. It is an attempt to understand, assess & estimate awareness, perception, knowledge, barriers and challenges of green building, the impact on energy

consumption reduction, water conservation, the indoor air quality and cost saving along with understanding of features and certifications and advance practices.

## **2. REVIEW OF LITERATURE**

In recent years, Green building practices have gained considerable attention owing to the capability of addressing environmental challenges and promoting sustainability in the building industry. This review of literature provides an overview of key studies, research papers, and scholarly articles related to green building, focusing on various aspects such as design strategies, energy efficiency, certifications, occupant well-being, and environmental impact.

Singh A. MS (2010) investigated the people who worked in conventional building and was moved to green office premises. He tried to investigate the effects of improved indoor environmental quality (IEQ) on perceived health and productivity and found that there was reductions in perceived absenteeism and work hours affected by asthma, respiratory allergies, depression, and stress. He also suggested that Green buildings offer improved living and working environment thus leading to enhanced productivity. In the same line Joseph G. Allen et al (2015) compared the indoor environmental air quality and human health of green building verses conventional buildings and found that green buildings provides better indoor environmental quality which directly has an impact on human health for the residents of those buildings. Further Lee, S. et al. (2018) examined the impact of green building features, such as daylighting, indoor plants, and thermal comfort, on occupant satisfaction, productivity, and well-being. The study emphasizes the importance of considering human-centric design elements in green buildings.

Ries, Et al (2006) suggested that the productivity increases about 25%, and energy use decreased about 30% in a green precast concrete manufacturing facility certified by the Leadership in Energy and Environmental Buildings (LEED) green rating system. Further in 2015, Smith suggested a potential solution to face the issues of urban growth that India faces. According to his study there should be the creation of sustainable urban development. He also highlighted the role of policy decisions in encouraging certain green rating systems in specific topographies. In his study, LEED-India and GRIHA showed a local variation in regards of the role of incentives and government mandates. The study also witnessed that there is a need for a more uniform policy as there is a lack of green developments in certain parts in India. In accordance with the previous studies, Yudelso, J. (2016) examined the energy performance of LEED-certified commercial buildings and assesses the effectiveness of LEED certification in promoting energy efficiency. The study finds that there was seen an improved energy performance in a LEED-certified buildings in comparison to non-certified buildings. Further in (2017), De Medeiros, J. et al. assessed the effectiveness of various green building certification programs like LEED, BREEAM, and GRIHA. The study analyzes empirical evidence related to the impact of certifications on energy savings, occupant satisfaction, and overall environmental performance. Osmani, M. et al. (2019) critically evaluated different green building standards and certification schemes, examining their strengths, limitations, and



regional applicability. The review provides insights into the complexities and challenges associated with implementing and assessing green building certifications.

Chen, L. et al. (2019) analyzed bioclimatic design principles suitable for tropical regions, considering aspects such as shading, natural ventilation, and site planning. The study emphasizes the importance of contextual design strategies for energy-efficient and comfortable green buildings in tropical climates. Supplementing to this study, Shahzad, M. et al. (2019) suggested energy-efficient retrofit strategies and technologies for existing buildings, highlighting their potential for reducing energy consumption and improving sustainability. The study emphasizes the importance of retrofitting strategies in transforming conventional buildings into green buildings. Further Zhang, Y. et al. (2020) discussed various energy-efficient technologies, such as smart building systems, advanced insulation materials, efficient HVAC systems, and renewable energy integration, highlighting their potential to improve energy performance and reduce operational costs in green buildings.

Chaturvedi (2015) concluded that the cost of green building is the main obstacle of the green building development in India. He also recommended a better incentive mechanisms or policies, to achieve better energy efficiency and lower levels of emission. According to Bartlett and Howard, (2000) also emphasized on the economic viability in development of green building from the perspective of developers. They further revealed that has weakened the developer's initiative to "Go Green". Another challenge was the scarcity of suppliers of green materials and equipment.

These papers contribute to the understanding of various aspects of green building, including sustainable design strategies, energy efficiency, certifications, occupant well-being, Barriers and challenges, environmental impact assessment, retrofitting, economic analysis, and policy frameworks. They provide valuable insights into the current trends, challenges, and opportunities in the field of green building.

### **3. OBJECTIVE OF STUDY**

- i) To assess awareness and perception of the importance of green building practices.
- ii) To understand the knowledge of Green Building Features and Certifications.
- iii) To Identify the Barriers and Challenges in implementing green building practices
- iv) To evaluate the Impact of Green Buildings on energy consumption reduction and on water conservation
- v) To assess Health and Comfort Benefits regarding the indoor air quality benefits of green buildings
- vi) To investigate Economic Considerations
- vii) To explore Personal Experience with living or working in green building

#### 4. RESEARCH METHODOLOGY

This study is descriptive in nature. It was conducted using the secondary data as to obtain the basis for review of literature and conceptual framework of the current topic.

The primary data was conducted using Questionnaire method (Google form). The questionnaire consisted of 4 demographic questions: Age, Gender, Occupation and Educational Qualification. There were 12 questions framed to accomplish the objectives of the study. The questionnaire was filled in by 50 respondents. The sample contained 25 architects, 11 Engineers, 6 Architect students, 2 doctorates and 6 others.

Data Analysis was done using Descriptive Data Statistics and Relative frequency Method such as Mean, Median, Mode, Standard Deviation, Skewness and percentage method. These measures helped the researcher in understanding the distribution and central tendency of the data, as well as its variability and shape. The percentage method provide more informative view, as it shows the distribution of categories as percentages.

#### 5. DATA ANALYSIS AND FINDINGS

##### 5.1 Demographic Analysis:

<i>Table 5.1: Age of Respondents</i>	
Mean	38.08
Median	37.5
Mode	45
Standard Deviation	12.72445821
Kurtosis	-0.986053806
Skewness	0.231008508
Range	48
Minimum	19
Maximum	67
Count	50

*Source: Researcher's primary data*

The average mean age in the dataset is 38.08 years suggests that the respondents generally fall within the middle-aged range indicating the typical age value of the data. The fact that the median and mode are close to the mean indicates a roughly symmetrical distribution. The mode of 45 suggests that the age value maximum respondents are of the age 45 years. The standard deviation of 12.72 indicates that the age value exhibits variability or dispersion around the mean age. In other words, it indicates a relatively wide range of ages among the respondents. The minimum age of respondent is 19 and the maximum age of respondents is 67 years.

Out of 50 respondents 33 were male and 17 were females.

The sample was generated for this study were 25 architects, 11 Engineers, 6 Architect students, 2 doctorates and 6 others.

In the present study 60% of the respondents have either lived or worked in the green building.

<b>Table 5.2: How familiar are you with the concept of green building?</b>	
Mean	4.48
Median	5
Mode	5
Standard Deviation	0.886174995
Kurtosis	8.074896907
Skewness	-2.594720356
Range	4
Minimum	1
Maximum	5
Count	50

*Source: Researcher's primary data*

The average rating of 4.48 indicates a moderate level of familiarity with the concept of green building among the respondents. With a median and mode of 5, it suggests that a substantial number of participants are familiar with green building practices. The relatively low standard deviation of 0.89 indicates that most respondents' ratings were relatively close to the average, showing a moderate level of agreement. The negative skewness (-2.59) indicates that the distribution may be slightly skewed to the left and indicates that there is higher concentration of response towards the higher end of familiarity scale.

<b>Table 5.3: In your opinion, how important are green building practices for environmental sustainability?</b>	
Mean	4.82
Median	5
Mode	5
Standard Deviation	0.481917937
Kurtosis	7.178157489
Skewness	-2.766114974
Range	2
Minimum	3
Maximum	5
Count	50

*Source: Researcher's primary data*

The average rating of 4.82 suggests that the respondents generally consider green building practices as important for environmental sustainability. The fact that the median and mode are 5 indicates a high level of agreement among the respondents regarding the importance of green building practices. The low standard deviation of 0.48 suggests that the majority of participants shared similar opinions i.e. Relatively high level of agreement about the significance of green building practices for sustainability. The negative skewness (-2.77) indicates that the distribution may be slightly skewed to the left showing higher concentration of response towards the higher end of sustainability.

<b>Table 5.4: Key features of green buildings</b>	
Water-saving fixtures and appliances	76%
Use of renewable energy sources (e.g., solar panels)	88%
Efficient insulation and windows for better thermal performance	66%
Indoor plants and green spaces	46%
Waste management and recycling practices	74%

*Source: Researcher's primary data*

With 88% of respondents identifying the use of renewable energy sources as a key feature of green building, it indicates a high level of recognition and support for clean and sustainable energy solution. Water-saving fixtures and appliances i.e 76% and Waste management and recycling practices i.e 74% also shows a strong and significant aspect of sustainable construction. 66% suggest a notable recognition of the role of insulation & windows in reducing energy consumption, enhancing comfort, and minimizing heat loss or gain. Indoor plants and green spaces with 46 % is relatively low as compared to the other features.

<b>Table 5.5: Awareness of any green building certifications or rating systems</b>	
LEED (Leadership in Energy and Environmental Design)	74%
BREEAM (Building Research Establishment Environmental Assessment Method)	32%
GRIHA (Green Rating for Integrated Habitat Assessment)	62%
Unaware	18%

*Source: Researcher's primary data*

The above results suggests that the most known certification or rating systems of green building is LEED with 74% , GRIHA is recognized by 62 % suggesting a relatively high level of awareness. BREEAM another well-known certification system is recognized by 32% showing a lower level of awareness. 18% of respondents were unaware of any certification or rating system.

<b>Table 5.6: The main barriers or challenges in implementing green building practices</b>	
Higher upfront costs	50%
Lack of Awareness & education	76%
Limited availability of green building materials and technologies	38%
Resistance to change in traditional construction practices	48%
Insufficient government incentives and policies	52%

*Source: Researcher's primary data*

The most commonly identified challenge is the Lack of awareness and education with 76% of the respondents. Insufficient government incentives and policies are considered a challenge by 52% of the respondents. Higher upfront costs associated with green building, with 50% of the respondents recognizing this as a barrier. Resistance to change in traditional construction practices is recognized by 48% of the respondents as a barrier. Limited availability of green building materials and technologies is seen as a barrier by 38% of the respondents.

<b>Table 5.7: How important do you think green buildings are in reducing energy consumption?</b>	
Mean	4.54
Median	5
Mode	5
Standard Deviation	1.034309
Kurtosis	6.576134
Skewness	-2.64734
Range	4
Count	50

*Source: Researcher's primary data*

The average rating of 4.54 suggests that the respondents believe green buildings play a significant role in reducing energy consumption. The median and mode of 5 further support the notion that most participants perceive green buildings as important for energy conservation. The standard deviation of 1.03 indicates some variability in the responses, suggesting differing levels of emphasis placed on energy reduction among the respondents. The negative skewness (-2.65) suggests a slight left skew in the distribution indicating a positive perception or belief in reducing energy consumption.

<b>Table 5.8: In your opinion, do green buildings have a significant impact on water conservation?</b>	
Mean	4.56
Median	5
Mode	5
Standard Deviation	0.704504
Kurtosis	12.12252
Skewness	-2.77467
Range	4
Minimum	1
Maximum	5
Count	50

*Source: Researcher's primary data*

The average rating of 4.56 indicates that respondents generally believe green buildings have a notable impact on water conservation. The median and mode of 5 reflect a high level of agreement among the participants. The standard deviation of 0.70 suggests relatively consistent views among the respondents, with most recognizing the positive influence of green buildings on water conservation. The high positive kurtosis (12.12) suggests a relatively higher peaked distribution indicating potential variations in the responses and the presence of the outliers.

<b>Table 5.9: Do you believe green buildings provide better indoor air quality compared to conventional buildings?</b>	
Mean	4.38
Median	5
Mode	5
Standard Deviation	1.027976018
Kurtosis	5.143422832
Skewness	-2.246067039
Range	4
Minimum	1
Maximum	5
Count	50

*Source: Researcher's primary data*

With an average rating of 4.38, respondents perceive green buildings as providing better indoor air quality compared to conventional buildings. The median and mode of 5 indicate that the majority of participants share this viewpoint. The standard deviation of 1.03 suggests some variation in the responses, reflecting differing opinions or levels of knowledge among the respondents.

<b>Table 5.10: Are you aware of any cost savings associated with green buildings (e.g., reduced energy bills, lower maintenance costs)?</b>	
Mean	4.42
Median	5
Mode	5
Standard Deviation	0.949543
Kurtosis	5.770129
Skewness	-2.29364
Range	4
Minimum	1
Maximum	5
Count	50

*Source: Researcher's primary data*

The average rating of 4.42 suggests that respondents have a moderate level of awareness regarding the cost savings associated with green buildings. The median and mode of 5 indicate that many participants are aware of the potential financial benefits. The standard deviation of 0.95 implies some variability in the responses, indicating differing levels of familiarity with the cost-saving aspects of green buildings.

<b>Table 5.11: Do you feel Green Building practices will become more widespread in the future?</b>	
Mean	4.54
Median	5
Mode	5

Standard Deviation	0.813408048
Kurtosis	6.397530851
Skewness	-2.267100422
Range	4
Minimum	1
Maximum	5
Count	50

*Source: Researcher's primary data*

Respondents generally believe that green building practices will become more widespread in the future, as indicated by the average rating of 4.54. The median and mode of 5 demonstrate a high level of agreement among the participants regarding the future prevalence of green building practices. The standard deviation of 0.81 suggests some variability in the responses, reflecting differing expectations or viewpoints among the respondents.

***5.12: The key areas for further improvement or innovation in green building practices are suggested by 35 respondents.***

The summary is as follows:

To promote further advancement in green building practices, society must grasp the importance of energy-saving and resources-efficient nature compared to conventional buildings. Rising awareness through newspaper ads, Seminars and conferences is essential.

Climate-responsive building designs and government incentives should make green building practices mandatory. Encouragement from the manufacturing companies, local skill development and integrating green building in core academics are also crucial for progress. Renewable energy sources, recycling system, waste management system and energy management system play vital roles in this movement. Overall, positive perceptions and growing awareness indicate potential for wider acceptance.

## **6. CONCLUSION**

In accordance to the objectives of the study the following was concluded:

A positive attitudes and perception of green building practices, recognizing their importance for environmental sustainability, energy conservation, water conservation, indoor air quality, and cost savings was found. Respondents generally believe that green buildings have a significant positive impact in these areas, indicating that they recognize the potential of sustainable construction to address critical environmental challenges and addressing climate change. This awareness is crucial in promoting sustainable development and ensuring the long-term well-being of both people and the planet. The level of awareness regarding the cost saving suggests that they recognize the potential economic advantages, such as reduced energy bills and lower maintenance costs, which can contribute to the financial viability and attractiveness of green building projects. The high level of agreement among the respondents regarding the importance of green building practices emphasizes a shared understanding and consensus on

this matter. The respondents demonstrate a moderate level of familiarity with green building concepts, indicating that they possess a certain level of knowledge and understanding in this area. However, there is a need for further awareness and education to enhance understanding and knowledge about green building practices. These findings having significantly satisfied the objectives of assessing awareness and perception of the importance of green building practices, evaluating the Impact of Green Buildings on energy consumption reduction, water conservation, indoor air quality, Health and Comfort Benefits and Economic Considerations.

The Preferences of the key features of green building in present study concluded that maximum emphasis is given to importance of clean and sustainable energy generation or alternatives, next is provided to water conservation, then comes reducing waste and promoting a circular economy energy efficiency followed by reducing heating and cooling demands, and lastly benefits of nature in indoor environment. It still signifies a considerable proportion of respondents who appreciate the value of biophile design and positive indoor environments. Implementing these can contribute to the overall sustainability and environmental performance of the buildings. There are number of respondents who are aware of each certification. Among them LEED is a widely recognized and established green building certification system, which may itself explain awareness level among the respondents. GRIHA, a green building rating system developed specifically for the Indian context suggest a relatively high level of awareness. The responses indicates a relatively high level of awareness indicating familiarity that aligns with the regional sustainability consideration. It is worth noting that few respondents reported unawareness highlighting an opportunity for further education and awareness building initiatives to enhance knowledge about these systems and their benefits. These findings having significantly satisfied the objectives of understanding the knowledge of Green Building Features and Certifications.

The major challenge in implementing green building practices is lack of awareness and education, the next comes insufficient government incentives, followed by higher upfront costs, resistance to change in traditional construction practices and last was limited availability of green building materials and technologies. Addressing these challenges is crucial for the wider adoption of green building practices but not impossible. These findings having significantly satisfied the objectives of Identifying the Barriers and Challenges in implementing green building practices

In the present study majority of the respondents have either lived or worked in the green building.

Overall, the data suggests a promising level of recognition, acceptance and appreciation for green building practices. However, it is important to note that there are variations in responses, indicating that there is still room for further education and awareness-building initiatives. Continued efforts to promote the benefits of green building practices and address any knowledge gaps can further accelerate the adoption of sustainable construction methods and contribute to a more sustainable and resilient built environment. While there are challenges to overcome, such as cost barriers and the need for increased awareness, there is a strong foundation for promoting sustainable construction and achieving environmental goals. By addressing the identified challenges and leveraging the positive perceptions, green building



practices can continue to gain momentum and contribute to become more prevalent in the construction industry. This anticipation reflects a belief in the potential of sustainable construction to drive positive change and contribute to a more sustainable and resilient built environment.

## **7. SUGGESTIONS**

There is a need for increased awareness and education initiatives to improve understanding and knowledge about green building practices among different stakeholders, including homeowners, professionals, and policymakers. It can be done through targeted initiatives such as education and awareness campaigns, availability of sustainable materials, policy advocacy, and financial incentives, the adoption of green building practices can be further encouraged and facilitated. Utilize various media platforms, including social media, websites, and traditional media channels, to disseminate information and raise awareness about green building practices. These campaigns can include workshops, webinars, and informational materials that explain the benefits of green building practices and provide practical guidance on their implementation. There is also a need for stronger governmental support in the form of incentives, regulations, and policies that encourage and facilitate the adoption of green building practices.

This suggests that the initial investment required for implementing sustainable building practices is a significant concern for many stakeholders. Forge partnerships with local governments, industry associations, and educational institutions to jointly promote and support green building practices.

The Government should inspire the adoption and recognition of green building certification systems. Support and showcase green building demonstration projects that serve as real-life examples of sustainable construction. Advocate for the implementation of financial incentives, tax breaks, or rebate programs that inspires the acceptance and implementation of green building practices. These incentives can offset the initial costs associated with sustainable construction and provide tangible benefits to individuals and organizations choosing to go green.

Offer training programs and professional development opportunities for architects, engineers, contractors, and other building professionals. Allocate resources to research and innovation in green building technologies and materials. Advocate the development and execution of supportive strategies, policies and regulations that encourage green building practices.

By implementing these initiatives and strategies, it is possible to create a more sustainable built environment, raise awareness about green building practices, and drive the widespread adoption of sustainable construction methods.

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# **An Empirical Study on Sustainability of Strategic Outsourcing in Banking Sector in India Based on Risk -Benefit Analysis**

**V Siji\***

**Vani Kamath\*\***

## **ABSTRACT**

The last two decades have witnessed an immense increase in competition in the banking industry. This has given rise to an intense quest to embrace strategic innovation techniques and technology to maintain their existing market share and continue on the path of sustainable development. Outsourcing is one such strategic innovation technique that has emerged as a unique solution which reduces the pressure on banks globally to operate profitably and efficiently. The aim of this article is to explore what outsourcing can offer today and will continue to provide in the future to the banking sector to have a beneficial effect on the financial domain. The purpose of this study is to explore the strategic considerations in the process of outsourcing and analyze the benefits and threats faced by the banks in its implementation. Data analysis is done with the help of ANOVA to compare the advantages and the challenges associated with outsourcing with respect to the banking industry in India. A complete empirical study has been conducted on the sustainability of outsourcing taking into account the entire universe of risk and opportunities associated with outsourcing in the banking sector. The findings of the study reflect that the offered benefits have a higher influence compared to the perceived risks. The outcome also paved a way to construct a strong risk benefit model to mitigate the risk for the smooth functioning of the Indian banking sector with proper harnessing of outsourcing activities.

**Keywords:** *Outsourcing, Performance, Risk Management, Sustainability, Risk-benefit Analysis*

## **INTRODUCTION**

The banking industry in India has experienced notable growth in the modern era, prompting financial institutions to adopt various strategies to maintain competitiveness and enhance operational efficiency. One such strategy is outsourcing, which allows banks to delegate certain functions to external service providers. Outsourcing has become a prevalent practice in the banking industry in India as institutions seek to improve efficiency, reduce costs, and focus on core competencies. However, this strategy also introduces certain risks that need to be carefully managed to ensure its long-term sustainability.

This study aims to investigate the sustainability of the outsourcing system in the Indian banking industry through a comprehensive risk-benefit analysis. By examining the potential risks and benefits associated with outsourcing, this research seeks to furnish decision-makers with valuable information and stakeholders in the industry. The introduction presents an outline of the growth of the Indian banking sector, the importance of outsourcing in achieving operational excellence, and the rationale behind conducting the study. It also defines the research objectives, scope, and methodology adopted for the study.

*\* Assistant Professor, School Of Management, DY Patil Deemed To Be University, New Mumbai*

*\*\* Dean, School Of Management, DY Patil Deemed To Be University, New Mumbai*

## **OBJECTIVES OF THE STUDY**

1. To evaluate the extent of outsourcing practices in the Indian banking sector and identify the key functions commonly outsourced by banks.
2. To analyze the risks associated with outsourcing in the banking industry in India, including data security, regulatory compliance, vendor dependency, operational risks, and reputational risks.
3. To evaluate the benefits derived from outsourcing in the Indian banking sector, focusing on cost reduction, improved operational efficiency, access to specialized expertise, scalability, and enhanced service quality.
4. To examine the influence of outsourcing on customer experience and satisfaction in the banking sector, examine how outsourced processes influence customer interactions and perceptions.
5. To provide evidence-based recommendations and best practices for banks in India to effectively manage outsourcing risks while maximizing the benefits, thereby enhancing the sustainability of outsourcing practices in the banking industry.

Thus, based on these objectives, the findings of the study will contribute to informed decision-making and foster best practices for financial institutions seeking to optimize outsourcing strategies in an increasingly competitive and dynamic environment.

## **HYPOTHESIS OF THE STUDY**

1. H<sub>01</sub>: There is no significant relationship between the extent of outsourcing in the Indian banking sector and the level of operational efficiency.  
H<sub>11</sub>: There is a significant positive relationship between the extent of outsourcing in the Indian banking sector and the level of operational efficiency.
2. H<sub>02</sub>: There is no drastic impact of the risks linked with outsourcing on the level of data security and privacy breaches in the banking industry in India.  
H<sub>12</sub>: There is drastic impact of the threats linked with outsourcing on the level of data security and privacy breaches in the banking industry in India
3. H<sub>03</sub>: The benefits derived from outsourcing in the Indian banking sector do not significantly impact on customer satisfaction and experience.  
H<sub>13</sub>: The benefits derived from outsourcing in the Indian banking industry significantly affect customer satisfaction and experience.
4. H<sub>04</sub>: There is no crucial difference in the risks and benefits of outsourcing between private and public sector banks in India.  
H<sub>14</sub>: There is a crucial difference in the risks and benefits of outsourcing between private and public sector banks in India.

5. H<sub>05</sub>: Effective risk management practices do not significantly influence the sustainability of outsourcing policies and procedures in the Indian banking sector.

H<sub>15</sub>: Effective risk management practices significantly influence the sustainability of outsourcing policies and procedures in the Indian banking sector.

## **LITERATURE REVIEW**

This literature review aims to synthesize existing research and studies on the risks and benefits of outsourcing in the Indian banking industry, providing a foundation for the empirical study on its sustainability.

In the last two decades, the Reserve Bank of India (RBI) has regularly developed and issued codes of conduct to be followed by the banks and Non-Banking Financial Company (NBFC) to improve their performances. (*RBI Guidelines 2006, RBI Guidelines 2015, RBI Guidelines 2021, RBI Guidelines NBFC*)

Academic journals from various disciplines, such as information systems (IS), marketing, human resources, information technology (IT), cloud management, and IS conference proceedings were extensively studied and analyzed during the literature search. Some have focused on the conceptual part (Allen Sandy & Ashok Chandrasekhar 2000; Ashok Deo Bardhan & Cynthia A Kroll 2003), while others have focused on the risks and benefits of outsourcing (Christine Harland et al. 2004; Nash Riggins 2019; Gulzhanat Tayauona 2012). Among those researchers, some have solely focused on a particular demographic area (Adam Mohd Suhaimi et al. 2007), while some others have studied on penetration in operation outsourcing only (Lancellotti R et al. 2003).

The reviewed articles were classified using five categories.

1. Based on overview and conceptual design
2. Based on the demographic area
3. Based on applications and benefits
4. Based on the area of application
5. Based on outlook over risk and challenges

## **STUDY BASED ON GENERAL OVERVIEW AND CONCEPTUAL DESIGN**

The first category, deals with the history of outsourcing, behavioral issues, and describes the general perceptions, decisions, acceptance and diffusion of outsourcing applications. It covers articles that deal with general introduction and foundational concepts of outsourcing. Allen Sandy and Ashok Chandrashekhar, 2000, depict how outsourcing has penetrated in every sector and became a necessity and explain the change that gave rise to outsourcing. The study was very general and couldn't provide information about the effects of outsourcing in banks in particular.

Richard C. Insinga and Michael Werle, 2000 addressed the linking of outsourcing to business strategy. Lancellotti, R. et al. 2003, analyzed the relevance of outsourcing and addressed the value created by outsourcing and the barriers to its successful implementation; the degree of viability of outsourcing across specific services and functions; and likely developments in the outsourcing market. But the paper lacks a thorough and empirically validated understanding of the risks of outsourcing, especially concerning business processes.

## **STUDY OF OUTSOURCING ON A DEMOGRAPHIC AREA**

Many authors have conducted their studies on a particular country, state or region to understand the impact of outsourcing and its effectiveness. The classified 14 papers on this particular theme addressed different demographic areas and arrived at different findings due to the difference in the culture, tradition and the rules being followed in that particular location.

Ang Soon and Detmar W. Straub, 1998, conducted a study of the U. S. Banking industry and the production cost, transaction cost, and financial slack were examined simultaneously to understand what influences the outsourcing decision. The limitation of the study was that it was a cross-sectional study and the degree of outsourcing influencing the perceptions of transaction costs and other costs were taken into account but focused solely on efficient organizational boundaries and ignored other factors. A study on outsourcing practices of the Kenyan banking sector was done by Dulacha G. Barako & Peter K. Gatere, 2008. The study focused on outsourcing practices in the banking industry and the urgent need for regulatory guidelines to control it, but a more pragmatic review and analysis could have benefited the study. The study was limited to the extent that its focus was on a specific country and its regulations.

## **STUDY ON THE BENEFITS OF OUTSOURCING**

**This** theme broadly depicts the studies that analyzed the benefits of outsourcing on the financial, technical and human aspects in almost all the segments of business. These papers describe the core competencies, turning non-profit activities into profit-generating activities, and cost reduction as the major advantages of outsourcing.

Dr. John Sullivan, 2006, measured the effectiveness of outsourcing in his study which focused on the development of well executed metrics which helped outsourcing meet its stated goals. But the paper deals only with the implementation of the matrix system in the outsourcing business, without studying the merits and demerits in the banking scenario in particular.

Nash Riggins, 2019, describes the prospects associated with opting to outsourcing essential back office jobs at banks and how it simplifies and streamlines their otherwise fragmented treasury departments, but the article lacked a look into the outsourcing risks and how to mitigate those risks.

## **STUDY ON OUTSOURCING IN DIFFERENT AREAS OF SPECIALIZATION:**

Papers grouped under the research based on an area of specialization theme focused on how outsourcing policies and strategies operate for different departments. This section captured 20 papers, out of which 11 focused primarily on IS outsourcing. Three topics emerged in this theme, which garners the importance of HR outsourcing. The rest of the papers addressed department-specific outsourcing, which includes cloud outsourcing, security services outsourcing, regulatory outsourcing and financial outsourcing.

Adam Mohd Suhaimi et al. 2007, focused on IS outsourcing, its policies and guidelines for risk management and steps to mitigate the risk. There are literature papers which focus on surveys about information systems (IS) outsourcing to study provider's understanding of clients' objectives and choosing the right provider (Lingmin Jiang & Ruiqiong Zhong, 2017), but all these studies is based on historical data comparison and might not work for all situations and departments. The scope of outsourcing in other areas and the impact on the performance of banks indulging in outsourcing could be included. Absence of sufficient literature to discuss the performance of banks in respect to other departments where outsourcing plays a crucial role.

## **STUDY ON THE RISKS ASSOCIATED WITH OUTSOURCING**

Hoecht.A, P. Trott, 2006, investigates the innovation-related risks that can arise from strategic outsourcing & adopts a trust, collaboration & network perspective for analysis. Hugh C. Kelly & Daniel E. Nolle, 2003, summarizes cross border outsourcing and risk management for banks and guidance in the context of the rapid growth in outsourcing in the banking industry. There is no analysis on the pros and cons associated with the potential outsourcing of a business function in order to maximize satisfaction and achieve the expected benefits.

Michael H. Grote, Florian A. Täube, 2007, points out the demerits of outsourcing in investment banking. Mehrdad Alipour, Baqer Kord, Elnaz Tofighi, 2011, detect the risks and study their effects on banks outsourcing process, in which the dependent variable is business process outsourcing and independent variable is the risk and statistical methods used are correlation coefficient and regression analysis. Possible solutions to outsourcing problems from a competence view should be suggested in this article so that outsourcing can be utilized as a better business strategy.

Ravi Kumar Jain, Ramachandran Natarajan, 2011, highlighted the key factors related to the benefits, risks, roadblocks, and criticality of outsourcing in banks. Suryanarayan Mohapatra, 2013, assessed the risk measuring techniques by using the factor analysis method. These studies were conducted on Indian banks as these articles missed on providing an overview to reach an optimum level of outsourcing in the banking industry.

The article by Meera. S & Sankaran K, 2015, Poonam Rautela, Madhulika P Sarkar and Rekha Goel, 2021, provides insights on issues and challenges in outsourcing of financial services

particularly both private and public sectors in India, to enhance their performance. There is scope for further study on customer relationship policies and the credibility of private and public banks and the impact of outsourcing on the performance of Indian banks.

## **RISK ANALYSIS**

In this part, the study identifies and evaluates the potential risks associated with outsourcing in the Indian banking sector. It covers various dimensions of risk, including data security and privacy, regulatory compliance, reputation risk, operational risk, and vendor dependency. The outsourcing of critical functions in the banking sector also exposes institutions to various risks. Data security and privacy breaches are among the most significant concerns, considering the sensitivity of financial information. Regulatory compliance is another major risk, as banks must ensure that outsourced processes meet all applicable legal and industry requirements. Vendor dependency is also an issue, where over-reliance on external providers may hinder a bank's ability to switch vendors if needed. Additionally, there is a risk of reputational damage if an outsourced service provider fails to deliver expected results or faces negative publicity.

- a. Data Security and Privacy: The risk of unauthorized access, data breaches, and loss of sensitive customer information.
- b. Regulatory Compliance: The risk of non-compliance with financial regulations and data protection laws.
- c. Vendor Dependency: The risk of over-reliance on a specific vendor, leading to operational vulnerabilities.
- d. Operational Risks: The risk of disruptions to critical banking functions due to outsourced processes.
- e. Reputational Risks: The risk of negative public perception if an outsourced service provider fails to deliver or faces controversies.
- f. Legal and Contractual Risks: The risk of contractual disputes or breaches that may impact the service quality or continuity.
- g. Currency and Country Risks: The risk of fluctuations in exchange rates and geopolitical uncertainties in the outsourcing location.

## **BENEFIT ANALYSIS**

The benefit analysis focuses on quantifying the advantages and positive impacts of outsourcing in the banking sector. This includes cost reduction, enhanced service quality, access to specialized expertise, scalability, and improved customer experience.

- a. Cost Reduction: Evaluate cost savings achieved through outsourcing, such as reduced operational expenses and lower infrastructure investments.
- b. Enhanced Efficiency: Assess improvements in process efficiency and productivity gained by leveraging specialized expertise and advanced technology from outsourcing partners.



- c. Access to Expertise: Examine the advantages of accessing specialized skills and domain knowledge from external service providers, which may not be available in-house.
- d. Scalability: Analyze the flexibility and scalability achieved through outsourcing, allowing banks to adjust resources based on changing demands.
- e. Strategic Focus: Evaluate the benefits of outsourcing non-core functions, enabling banks to focus on their core competencies and strategic initiatives.
- f. Service Quality: Measure improvements in service quality and customer satisfaction resulting from outsourced processes.
- g. Innovation: Assess the potential for innovation and access to cutting-edge technologies that outsourcing can bring to the banking sector.

## **RISK-BENEFIT ANALYSIS**

Conducting a risk-benefit analysis involves quantifying and comparing the potential risks and benefits associated with outsourcing in the banking sector. This can be done by assigning numerical scores to different risk factors (e.g., data security, regulatory compliance) and benefit factors (e.g., cost reduction, service quality) and then calculating an overall risk-benefit ratio for each outsourcing arrangement.

## **RESEARCH METHODOLOGY**

The research methodology outlines the approach used for data collection, analysis, and interpretation. It specifies the sources of data, sample size, and the analytical tools utilized for the risk-benefit analysis. It can help uncover patterns and group variables that are related to specific aspects of outsourcing sustainability.

**Data Collection:** Primary data is collected through surveys and questionnaires conducted on a sample of bank employees and bank customers. The chosen representative sample of bank employees are from various private and public banks in India, having fairly good experience with outsourcing practices. The sample includes a mix of employees and customers from public, private, and cooperative banks to capture different perspectives and practices. The respondents have rated their perceived benefits and risks of outsourcing on a numerical scale (Likert scale e.g., 1 to 5) for each type of function outsourced, such as IT services, ATM services, credit card servicing, call center functions, etc.

From the qualitative data obtained from interviews or open-ended survey questions, structured data analysis can be applied to identify themes, patterns, and insights related to outsourcing practices and perceptions of risks and benefits.

## **DATA ANALYSIS**

Pre-processing of the data is done to ensure data cleanliness and a check on any missing or outlier values in the responses. For an empirical study on the sustainability of outsourcing in the banking sector in India based on risk-benefit analysis, several data analysis techniques can

be applied to examine the relationships between variables and test the research hypotheses. In this study, the Analysis of Variance (ANOVA) test and Correlation test are used. The choice of apt data analysis techniques depends on the research questions, the data collection methods, and the objectives of the study. Combining multiple analysis techniques can provide a comprehensive and robust assessment of the sustainability of outsourcing in the banking sector in India. By the ANOVA test, the means of the perceived benefits are compared between the different groups (types of functions outsourced). The test will determine whether there is a statistically significant difference in the perceived benefits

Correlation analysis helps to ascertain the connection and relation between different variables. It is used to assess whether there is a correlation between the extent of outsourcing and operational efficiency, or if there is a relationship between outsourcing risks and customer satisfaction. This study can further help to identify significant predictors of outsourcing outcomes and provide insights into how certain factors influence sustainability.

### **Hypothesis Testing - 1**

**H<sub>01</sub>: There is no substantial correlation between the extent of outsourcing in the Indian banking sector and the level of operational efficiency.**

**H<sub>11</sub>: There is a substantial positive correlation between the extent of outsourcing in the Indian banking sector and the level of operational efficiency.**

<b>Correlations</b>			
		<b>Number of outsourced activities</b>	<b>Level of operational efficiency</b>
Number of outsourced activities	Pearson Correlation	1	0.225
	Sig. (2-tailed)	-	0.168
	Sum of Squares and Cross-products	13.377	5.034
	Covariance	0.352	0.132
	N	239	239
Level of operational efficiency	Pearson Correlation	0.225	1
	Sig. (2-tailed)	0.168	-
	Sum of Squares and Cross-products	5.034	37.409
	Covariance	0.132	0.984
	N	239	239

### **Interpretation**

The significance level is more than 0.05, hence the null hypothesis is accepted and the alternate hypothesis is rejected. The study shows that there is no substantial relationship between the extent of outsourcing in the Indian banking sector and the level of operational efficiency. This exercise emphasizes that increasing the level of outsourcing and indulging in excessive level

of outsourcing will not increase the level of operational efficiency of the banks. From the data analysis, it is interpreted to reap the benefits of outsourcing, a bank should establish a futuristic performance measurement system to confirm that the service provider operates in a performance area and that it provides the bank with the expected operational and organizational value. A well formulated performance measurement system will also provide key stakeholders with metrics to measure existing performance against proposed goals and objectives.

## **Hypothesis Testing – 2**

**H<sub>02</sub>: There is no significant impact of the threats linked to third party outsourcing on the level of data security and privacy breaches in the banking industry in India**

**H<sub>12</sub>: There is a significant impact of the threats linked to third party outsourcing on the level of data security and privacy breaches in the banking industry in India**

### **i. ANOVA test (Category: private and public sector bank)**

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Between Groups	9.800	104	2.450	3.108	.028
Within Groups	26.800	134	.788		
<b>Total</b>	<b>36.600</b>	<b>238</b>			

### **ii. ANOVA test (Number of outsourced activities)**

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Between Groups	11.241	118	2.810	3.768	.012
Within Groups	25.359	120	.746		
<b>Total</b>	<b>36.600</b>	<b>238</b>			

## **Interpretation**

The significance level of the above cases is less than 0.05, the null hypothesis is rejected. The pilot study confirms that there is a drastic impact of the threats associated with third party outsourcing on the level of data security and privacy breaches in the banking industry in India. Outsourcing involves sharing sensitive customer data with third-party service providers. If these providers do not have robust cyber security measures, they become potential targets for cyber criminals, leading to data breaches and potential theft of customer information.

## **Hypothesis Testing – 3**

**H<sub>03</sub>: The benefits derived from outsourcing in the Indian banking sector do not significantly impact on customer satisfaction and experience.**

**H<sub>13</sub>: The benefits derived from outsourcing in the Indian banking sector significantly impact customer satisfaction and experience.**

**i) ANOVA test (Qualification of customers)**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.237	103	5.079	13.259	<.001
Within Groups	13.407	135	.383		
Total	28.643	238			

**ii) ANOVA test (Category: Employment of customers)**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.010	104	2.753	5.307	.002
Within Groups	17.633	134	.519		
Total	28.643	238			

**Interpretation**

The significance level for all the above cases is less than 0.05, the null hypothesis is rejected. The pilot study confirms that the benefits derived from outsourcing in the Indian banking sector significantly impact customer satisfaction and experience.

It is important to note that while outsourcing benefits can positively impact customer satisfaction, effective vendor management and service level agreements are crucial to maintaining service quality and ensuring a seamless customer experience. Additionally, transparency and effective communication with customers about outsourced services can foster trust and further enhance satisfaction levels. By strategically utilizing outsourcing to optimize customer services, banks can strengthen their competitive position and build long-lasting relationships with their customers in the Indian banking sector.

**Hypothesis Testing - 4**

**H<sub>04</sub>: There is no significant difference in the risks and benefits of outsourcing between private and public sector banks in India.**

**H<sub>14</sub>: There is a significant difference in the risks and benefits of outsourcing between private and public sector banks in India.**

**i) ANOVA test (Category of banks- Public and Private Banks)**

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	10.319	3	3.440	3.644	.022
Within Groups	33.040	35	.944		
Total	43.359	38			

**ii) ANOVA test (Location of banks- Rural, Semi Urban and Urban)**

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Between Groups	16.973	153	5.658	10.089	<.001
Within Groups	19.627	85	.561		
Total	36.600	238			

**Interpretation**

The significance level for all the cases is less than 0.05, the null hypothesis is rejected. The pilot study confirms that there is a significant difference in the risks and benefits of outsourcing between private and public banks in India.

It indicates that these two categories of banks have distinct approaches to outsourcing practices. The reasons for the differences can be attributed to various factors, including differences in organizational structures, risk management strategies, regulatory compliance, and outsourcing strategies.

**Hypothesis Testing - 5**

**H<sub>05</sub>: Effective risk management practices do not significantly influence the sustainability of outsourcing policies, procedures and practices in the Indian banking industry.**

**H<sub>15</sub>: Effective risk management practices significantly influence the sustainability of outsourcing policies, procedures and practices in the Indian banking industry.**

**i) ANOVA test (Experience of staff)**

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Between Groups	11.946	4	2.987	6.081	<.001
Within Groups	16.697	34	.491		
Total	28.643	38			

**ii) ANOVA test (Level of hierarchy of the staff)**

	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Between Groups	11.059	4	2.765	2.910	.036
Within Groups	32.300	34	.950		
Total	43.359	38			

**iii) ANOVA test (Gender of staff)**

	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Between Groups	9.893	3	3.298	3.449	.027
Within Groups	33.466	35	.956		
<b>Total</b>	<b>43.359</b>	<b>38</b>			

## **Interpretation**

The significance level for all the above three cases is less than 0.05, the null hypothesis is rejected. Hence, the study depicts that effective risk management practices have a significant influence on the sustainability of outsourcing policies, procedures and practices in the Indian banking sector.

When banks implement robust risk management strategies, they can better mitigate potential risks associated with outsourcing, leading to more sustainable and successful outsourcing arrangements. By adopting effective risk management practices, banks in the Indian banking sector can foster sustainable outsourcing practices. A well-managed outsourcing strategy ensures that the potential benefits of outsourcing are maximized while minimizing the adverse impacts of risks, ultimately contributing to the long-term success and competitiveness of the banking sector.

## **FINDINGS OF THE STUDY**

The results of the ANOVA test provide valuable insights into how different types of outsourcing functions impact the perceived benefits in the banking sector. This information can help banks in India make informed decisions about their outsourcing strategies and identify which functions are more likely to yield higher benefits for their specific needs and goals.

## **CONCLUSION**

The conclusion summarizes the key findings of the study and their implications for the sustainability of outsourcing policies and procedures in the Indian banking industry. This report presents the findings of our empirical study on the sustainability of strategic outsourcing in the banking sector in India, focusing on a comprehensive risk-benefit analysis. It highlights the major risks faced by banks due to outsourcing practices and the corresponding benefits they have gained. The study also revealed that outsourcing functions such as customer support and IT operations have led to noticeable cost reductions for banks. The benefits of strategic outsourcing in the banking sector in India are substantial and have positively impacted operational efficiency and competitiveness. Risks are prevalent but manageable through effective risk mitigation strategies and strong governance frameworks. The risk-to-benefit ratio, when considered holistically, indicates that, at present, the benefits outweigh the risks. Hence, we can conclude that strategic outsourcing in the Indian banking sector is currently sustainable. Banks that implement best practices in risk management and regulatory compliance are likely to continue reaping the benefits of outsourcing.

This study also offers the following recommendations for stakeholders like continuously investing in data security and privacy measures to mitigate risks associated with sensitive customer information, strengthening regulatory oversight and compliance mechanisms for outsourcing partners, regularly assessing and reassessing the risk-benefit balance to adapt to

changing market dynamics and fostering a culture of transparency and collaboration between banks and outsourcing partners to enhance long-term sustainability.

There is no positive relation between the extent of outsourcing in the Indian banking industry and the level of operational efficiency. The study also reveals that outsourcing provides access to specialized skills and domain knowledge that may not be readily available within the bank, leading to improved service quality and innovation. There is a significant impact of the threats linked with outsourcing on the level of data security and privacy breaches in the banking industry in India. The study indicates that banks need to carefully manage reputational risks associated with outsourcing, particularly if the outsourcing partner's actions or performance impact customer trust and perception.

The benefits derived from outsourcing in the Indian banking sector significantly impact customer satisfaction and experience. Banks will experience improved process efficiency and faster service delivery by leveraging the expertise of outsourcing partners, leading to streamlined operations and enhanced customer experiences.

There is implicit variation in the risks and benefits of outsourcing between private and public sector banks in India. The study also identifies potential concerns regarding over-reliance on specific vendors, which could pose operational vulnerabilities if the relationship with the vendor becomes strained or if the vendor experiences financial difficulties. The risks and benefits of outsourcing vary among different banks based on their unique outsourcing strategies, risk management practices, and operational contexts. Risk management is an ongoing process. Banks should continuously monitor the performance of outsourcing partners, regularly assess risks, and adapt risk mitigation strategies as needed. Effective risk management involves establishing clear and comprehensive contractual terms that outline the responsibilities and liabilities of both the bank and the outsourcing partner.

Effective risk management practices significantly influence the sustainability of outsourcing policies and procedures in the Indian banking industry. This study also helps to assess the long-term impact of outsourcing on the bank's competitive position, growth potential, and overall sustainability in the dynamic banking sector.

In conclusion, our empirical study suggests that strategic outsourcing in the banking sector in India, when assessed through a risk-benefit analysis, is currently sustainable. However, vigilance, adaptation, and continuous improvement in risk management and compliance practices will be essential to maintaining this sustainability in a dynamic and evolving financial landscape.

## **RECOMMENDATIONS & FUTURE SCOPE**

This paper serves as a valuable resource for banking professionals, policymakers, and researchers seeking insights into the complex relationship between strategic outsourcing, risks, and benefits in the Indian banking sector. Future research could explore the impact of emerging

technologies, evolving regulatory landscapes, and customer preferences on the sustainability of strategic outsourcing in the Indian banking sector.

The recommendation section interprets the results and provides insights into the sustainability of third party outsourcing in the Indian banking industry. It compares the risks and benefits, identifies trade-offs, and discusses factors influencing the success of outsourcing initiatives.

It also suggests avenues for future research to deepen the understanding of this evolving domain. By undertaking a systematic risk-benefit analysis, this empirical study endeavors to provide crucial insights into the long-term viability of outsourcing in the Indian banking sector, ultimately assisting financial institutions in making informed decisions for sustainable growth and success. Based on the study's findings, this section proposes practical recommendations and best practices to optimize outsourcing strategies in the Indian banking sector. It aims to guide decision-makers in minimizing risks while maximizing the benefits.

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# **To Assess the Role of Financial Empowerment among Working Women with reference to Economic Independence and Financial Literacy**

**Glancy Albuquerque\***

## **ABSTRACT**

My research paper aims to assess the role of financial empowerment among working women in Mumbai. Financial empowerment refers women's ability to control their financial resources, make informed decisions about money matters, and achieve financial security and independence.

This research paper will employ qualitative interviews administered to a sample of working women from industry. The surveys will measure the level of financial literacy, financial socialisation, and financial management skills among the participants. Additionally, the surveys will collect data on the participant's savings, investments, and financial goals.

I hope to gain deeper insights into their experiences of financial empowerment. The interviews will explore the factors that contribute to or hinder financial empowerment among working women, such as cultural norms, gender biases, workplace policies, and access to financial resources and opportunities.

The findings of this research will provide valuable insights into the role of financial empowerment in the lives of working women in terms of their economic well-being, career advancement, and overall empowerment. The results will contribute to the existing body of knowledge on women's economic empowerment to enhance financial empowerment strategies. Ultimately, the overall study aims to contribute to the broader goal of gender equality and women's empowerment in society.

**Keywords:** *Working Women, Financial Empowerment, Financial literacy, financial socialization, financial management skills.*

## **INTRODUCTION**

The coronavirus (COVID-19) pandemic is the greatest challenge that we have faced defining global health hazards.

The dynamics of the working environment had exerted huge pressure on working women as they need to handle two full time jobs – one at home and the other at office. Working women face difficulty in balancing family and work. Work life balance is necessary for women to cope with the family and work.

*\* Research Scholar, Durgadevi Saraf Institute of Management Studies, Mumbai*

Financial well-being has become an important topic during recent years. Many scholars have identified the gender gaps in financial well-being, its antecedents, and outcomes (Goncalves et al., 2021). Financial literacy has emerged as an important determinant of financial well-being and financial empowerment. Financial literacy is becoming even more important as the financial world is enduring more complexities. Therefore, a better understanding of financial concepts and financial products has become inevitable to develop skills for making sound financial decisions to improve financial well-being and empowerment (Philippas and Avdoulas, 2020).

"Gender parity can boost India's GDP by 27%." (Lagarde, Christine, and Erna Solberg. "The Power of Parity: Advancing Women's Equality in the Economy." World Economic Forum, January 2018). India's GDP can expand by a whopping 27% if the number of female workers increases to the same level as that of men yet many Indian women are still held back from gaining financial independence and making their own financial decisions.

## REVIEW OF LITERATURE

For the Asian region, according to the World Bank's (2016) report, historically financial inclusion in the Asian world has been low as compared to other countries, and women are more vulnerable as compared to men in making financial decisions related to saving and choosing financial products. Another important study by Hasler and Lusardi (2017) at the Global Financial Literacy Excellence Center (GFLEC) for the G20 countries reports that Asia has one of the lowest financial literacies (women around 25% and men around 33%) among G20 countries, whereas the United Kingdom has the highest financial literacy rate among women (around 55%), and United Kingdom has the highest financial literacy rate among men (around 62%) (S&P Global FinLit Survey and Global Findex Database, 2021).

Country	Women's Financial Literacy Rate	Men's Financial Literacy Rate	Gender Gap
Argentina	35%	50%	-15%
Australia	48%	55%	-7%
Brazil	37%	49%	-12%
Canada	53%	59%	-6%
China	40%	48%	-8%
France	50%	57%	-7%
Germany	48%	53%	-5%
India	25%	33%	-8%
Indonesia	20%	26%	-6%
Italy	42%	50%	-8%
Japan	43%	50%	-7%
Republic of Korea	48%	55%	-7%
Mexico	34%	43%	-9%
Russia	38%	45%	-7%

Country	Women's Financial Literacy Rate	Men's Financial Literacy Rate	Gender Gap
Saudi Arabia	24%	31%	-7%
South Africa	39%	47%	-8%
Turkey	32%	39%	-7%
United Kingdom	55%	62%	-7%
United States	44%	50%	-6%

*Source: Hasler & Lusardi, 2017, GFLEC*

The most recent figures on financial literacy rates for women and men in G20 countries come from the OECD/INFE 2020 International Survey of Adult Financial Literacy. The survey found that the average financial literacy score for women in G20 countries was 12.2, while the average score for men was 12.8. This means that women in G20 countries have a statistically significant lower financial literacy score than men.

The gender gap in financial literacy is not uniform across all G20 countries. In some countries, such as Canada, the United Kingdom, and the United States, women have higher financial literacy scores than men. In other countries, such as India and Indonesia, women have much lower financial literacy scores than men.

Women form 48% of our population, (World Bank, 2022) and only a small percentage of exempt women in India have a significant say in 'how' and 'where' of financial matters in households. This is because most women do not prefer to get involved in monetary decisions and financial matters in India, as these are in the hands of a male relative. Moreover, educational institutions do not teach money management skills, so the responsibility is justly on us to mould women's financial future. In another indicator, the percentage of Indian women borrowing from financial institutions is around 6%, whereas it is around 24% in Australia and 25% in Canada (World Bank 2021). This shows that although India has generally promising economic indicators, they have a quite low score in terms of financial literacy with women lower than men. Financial literacy can help women to gain confidence in and control over their financial decisions. Consequently, these individuals are better able to control their social standing. It follows that social empowerment, though often overlooked, should be an integral part of any financial literacy initiative.

The current study employs social cognitive theory (SCT), which was proposed by Bandura (1986), and postulates the triadic reciprocity and the interrelation between individual, ecological, and attitude aspects. Martin et al.(2014, p. 2) hold that “SCT estimates the ability of an individual to engage in a targeted behavior, based on internal and external parameters and their interrelationships.”

The study offers an important contribution to the body of knowledge and practice by responding to the research call by Lusardi and Tufano (2009); Hasler and Lusardi (2017), Philippas and Avdoulas (2020); Goncalves et al. (2021), and Thomas and Gupta (2021). It offers a theoretical framework that examines the role of financial literacy and financial socialization in improving

financial self-efficacy, financial coping behavior, and financial empowerment among Indian women.

India is now placed 127 out of 146 nations in terms of gender parity, up from 135 last year, according to the annual Global Gender Gap Report, 2023. The fact that the gender gap has closed by 64.3% is an improvement, but this is hardly a reason for celebration.

India's progress in economic participation and opportunity remains a challenge, with only 36.7% gender parity achieved in this domain.

COVID-19's massive disruption to employment, childcare, and school routines has crippled the economy and pushed millions of women and families to the financial brink. This moment provides an important opening to rethink how women are coping.

A 2017 study by the National Council for Applied Economic Research found that the percentage of dual-earner couples in India has increased from 17% in 2005 to 25% in 2015. Work-life balance assumes great significance for women as they are virtually in two full time jobs - one at home and the other at work/office. Working mothers often have to challenge stereotypes and perceptions that evolve as a working woman becomes a working mother. Women often find it more difficult to maintain balance the pressures of work and demands at home.

Working women must carefully handle their personal balance and skillfully blend their roles, so as to optimize their potential in all quadrants of life.

According to Mckinsey: the annual report, published since 2015, analyzes workplace data and the experiences of men and women from the previous year. Women could be leaving the workforce more than men.

Every year since 2015, women and men at every level have considered leaving and actually left their companies at comparable rates. But the pressures of COVID-19 and the new work environment have completely changed that landscape. In the worst-case scenario, if women leave the workforce at the rate, they say they are considering, corporate America could lose over two million women in the workforce—more than the number of women who graduate in reorganization and potential attrition due to women stepping out of the workforce. (McKinsey & Company, 2021). Attrition is not a driver in the difference between men and women's representation, but this could be different next year, possibly as a result of the shift to remote work.

The National Women's Law Center reported in 2022 that "the COVID-19 pandemic has exacerbated the gender gap in the workforce, with women more likely than men to have lost their jobs and to have left the workforce altogether." The center estimates that over 1.5 million women have left the workforce since the start of the pandemic.

The World Bank reported in 2022 that "the global gender gap in labor force participation is at

its highest level in 25 years." The bank estimates that over 130 million women could join the global workforce if barriers to women's participation were removed.

According to DELOITTE: Global survey finds that nearly seven out of 10 women who experienced negative shifts in their routine because of the COVID-19 pandemic believe their career progression will slow down. These extra demands across work and home come at a heavy price. Forty percent of working women who experienced negative shifts in their daily routine say they're unable to balance their work and life commitments, and nearly 40% cite significant consequences to their physical and mental well-being.

Economic Times (Bloomberg) 2021: Between 2010 and 2020, the number of working women in India dropped from 26% to 19%, according to data compiled by World Bank. As infections surged, a bad situation turned dire: Economists in Mumbai estimate that female employment plummeted to 9% by 2022.

Closing the employment gap between men and women — a whopping 58 percentage points — could expand India's GDP by close to a third by 2050. That equates to nearly \$6 trillion in constant US dollar terms, according to a recent analysis from Bloomberg Economics. Doing nothing threatens to derail the country on its quest to become a competitive producer for global markets. Though women in India represent 48% of the population, they contribute only around 17% of GDP compared to 40% in China. (Bloomberg Economics, 2022)

Using 48 Acts, 169 Rules, and 20 Notifications/Orders, Trayas, a regulatory research and policy advisory company, constructed an index comparing 23 states on how much economic freedom they give women. The index shows the extent of law-based discrimination in an effort to ultimately repeal these stifling directives. If Indian women participated in the labour market at the same rate as men, over 200 million additional workers could be mobilized. McKinsey Global Institute estimates that by 2025, equal opportunities for women in India could add \$700 billion to the economy.

One in four working women, 15.5 million, has a child under the age of 14 at home. Some of these women work part time or have a family member on whom they can rely to provide supervision for their young and school-aged children. But more than 10 million (17% of all working women) rely on childcare and schools to keep their children safe while they work. These women are working at least half time and do not live with a potential caregiver at home—another adult who is either out of the labor force or working less than half time. In comparison, 12% of all working men are reliant on schools and childcare.

The concerns for women empowerment have been rising in India over last few decades. Series of political events post-2014 in India has heightened societal concerns about women's role in economic life as well as critical roles within their households. Mostly, empirical articles in this literature have studied the effects of financial inclusion on women empowerment that has evaluated an over-broadened meaning of empowerment or a truncated part of it (Goetz & Gupta, 1996). Most investigations are typically cross-country research (Demirguc Kunt, Klapper, & Singer, 2013; Lampietti & Stalker, 2000; Quisumbing, Haddad, & Pena, 1995). Within a

nationalized context, the studies address the conduct of female-headed family units concentrating basically on financial access alone (Fletschner, 2008; Hazarika & Guha-Khasnobis, 2008; Rawlings & Rubio, 2005). Another set of studies implies presence of gender gap due to lower financial literacy (Fernandes, Lynch, & Netemeyer, 2014), behaviour biases (Frisancho, 2016) and institutional segregation (Corsi & De Angelis, 2017). Estimation of women empowerment is another glitch as it cannot be straightforwardly observed and has numerous features (Beteta, 2006; Mason, 2005; Swain & Wallentin, 2009).

**Recent Studies Explore Barricades For Women's Participation In Economy** A report published by the Hindustan Times in 2021 quoted the study 'The Financial Agency of Women' conducted by the Gates Foundation, which found that many Indian women depend on their families when they need money. It had understood finances as a domain that men mainly dominated as the society didn't associate women with roles that required earning bread. Thereby, their rights to make financial decisions were somewhat limited.

Following this, a survey published by the State Bank of India 2021 found that being financially independent fell among the top three priorities for Indian women. Among these, about three in ten women found the cost of living as a major challenge toward achieving financial independence, and one in four women believe social/familial restrictions or lack of guidance from home as the key player towards them remaining financially dependent on external factors. The survey was conducted with a sample size of 1,000 women aged between 25-45, from the cities of tier I and tier II across India. It actively attempted to understand how women perceived financial independence and what barricaded them from reaching this goal. Most of them indicated that they do not earn enough to save and deem themselves financially independent. Unequal pay then comes into play, where the remunerations offered to men and women vary greatly. In India, as the gender ratio nears to an equal, men earn 82 per cent of the labour income, whereas women make barely 18 per cent of it, according to the global earnings presented in the World Inequality Report 2022.

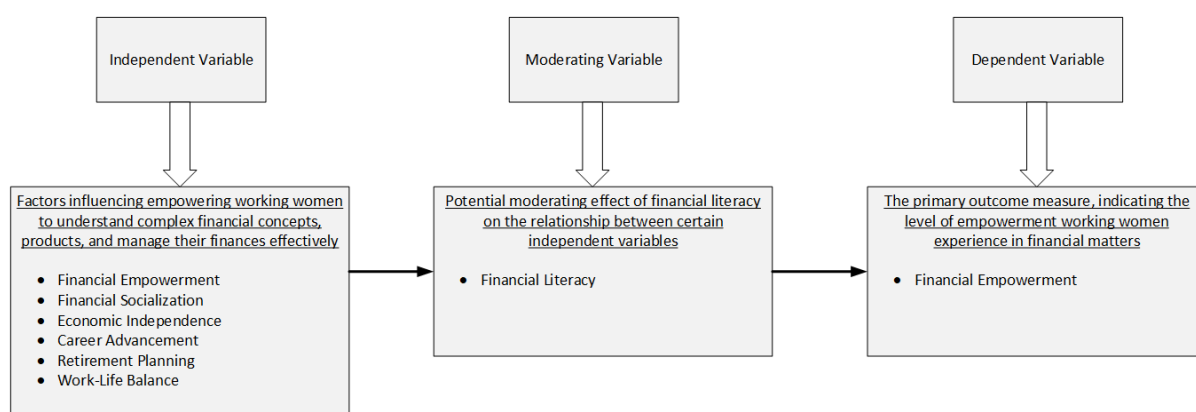
As per the World Economic Forum's Global Gender Gap Report, 2023. Women's estimated earned income in India is only one-fifth of men's, which puts the country among the bottom 10 globally on this indicator. It implies that women earn significantly less for the same earning years as men, while they need to save a lot to ensure they meet their long-term needs.

The percentage of working-age women who are economically active in the country is far lower than the global average. All these studies clearly indicate a lot needs to be studied before a lot can be done for women to be economically independent.

Today, more and more women in India are focusing on being self-dependent and financially secure. However, most women are still not self-dependent, especially in financial matters like investment and insurance. While women strive to be financially independent, one-third of the women find lack of proper information and knowledge about investment and insurance, as one of the pulling factors."

## CONCEPTUAL FRAMEWORK

This conceptual framework is a roadmap, highlighting key variables that define the Financial Empowerment of working women. It centers on Financial Literacy as the cornerstone, leading to economic independence and career advancement. It explores the influence of financial socialization, retirement planning, work-life balance, and entrepreneurship, while addressing gender norms, personal and family security, and access to tailored financial resources.



This framework guides us in uncovering the intricate dynamics that drive women's financial empowerment, ultimately fostering a more inclusive and prosperous society.

## RESEARCH METHODOLOGY

For this research, the focused group survey was used. Twenty One working women have answered a questionnaire. The questions were asked related to self-coping behaviours, financial understanding, independence, financial efficacy and financial socialization.

Focused group surveys allow researchers to gather in-depth insights into the perceptions, experiences, and attitudes of specific groups. This method is particularly useful for understanding the nuances of financial empowerment among working women by directly engaging with them in a group setting.

A focused group survey can provide qualitative data, which complements quantitative data obtained through questionnaires. It helps capture the "why" and "how" behind certain responses, offering a deeper understanding of the research topic.

Primary data was collected through questionnaire via Google forms and the technique used to collect data is via questionnaire is Stratified Random Sampling.

## OBJECTIVES

To assess the role of financial Empowerment among Working Women with relevance to below areas:



- Economic Independence Among Working Women
- Financial Literacy Levels and Decision-making
- Career Advancement and Earnings Disparities
- Retirement Planning and Investment Behavior
- Financial Empowerment and Work-Life Balance
- Entrepreneurship and Women-led Businesses
- Overcoming Gender Norms and Cultural Barriers
- Personal and Family Financial Security
- Access to Financial Resources for Working Women
- Societal and Economic Impact of Financial Empowerment
- These headlines serve as starting points for deeper exploration and analysis in each sub-topic in the study.

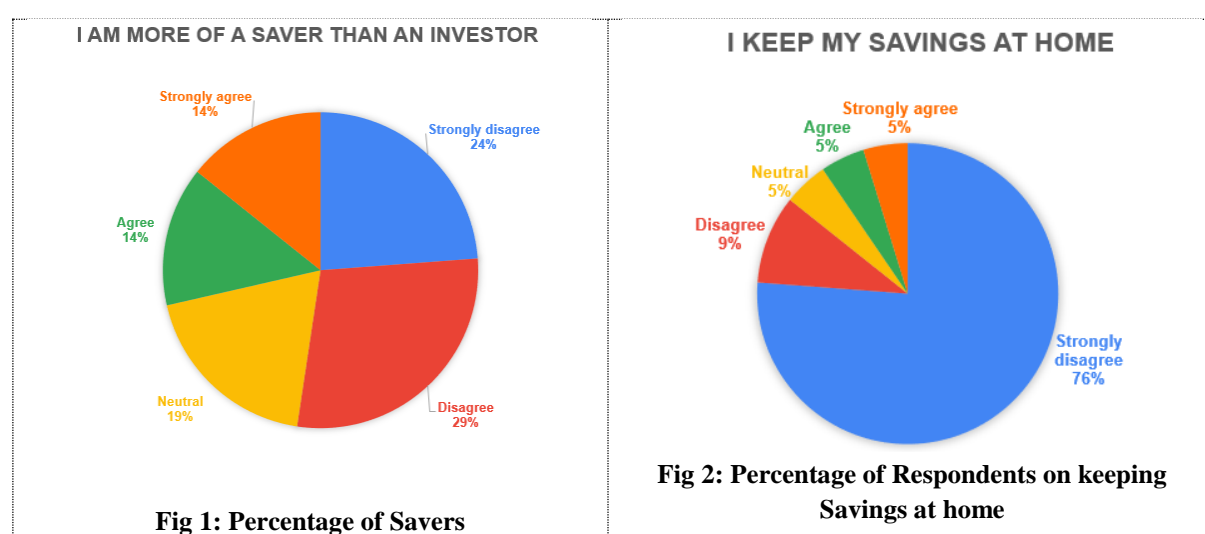
## FINDINGS AND ANALYSIS

**Table 1: Reliability Analysis:**

Cronbach's Alpha	No. of items
0.7566	70

To study reliability of the tool, Cronbach's alpha value was examined. From Table1, it is seen that the score for alpha is 0.756 which indicates good internal consistency which shows there is a reasonable level of agreement or consistency among the responses to the questions.

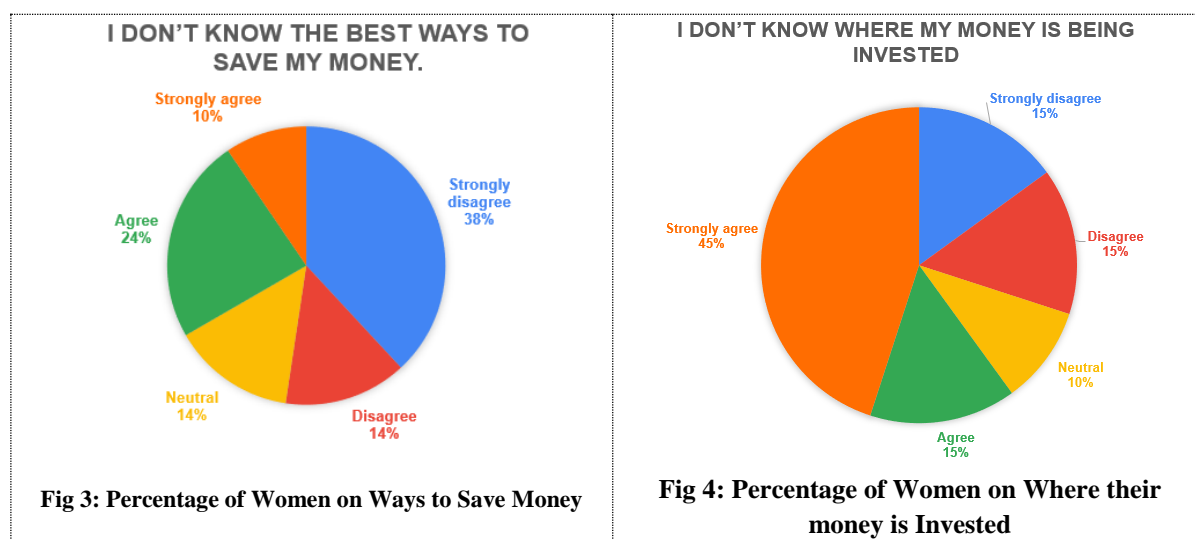
From the 70 odd questions posed to the participants, only a few are produced below which indicate special highlights.



*Source: Researcher's Primary Data.*

Indian women (Fig1 and 2) have expressed that they agree that savings should not be kept at home but conversely, we also see that they admit that they do define themselves more as “savers” rather an “investors”. Influence by various factors such as limited access to formal financial services, cultural norms, and perceptions of safety. Encouraging financial literacy and promoting inclusive banking services can empower women and enhance their financial security.

Also, as indicated below, women must educate themselves on ways to invest their funds. Women are just as capable of saving money as men, and with education and support, they can achieve their financial goals.

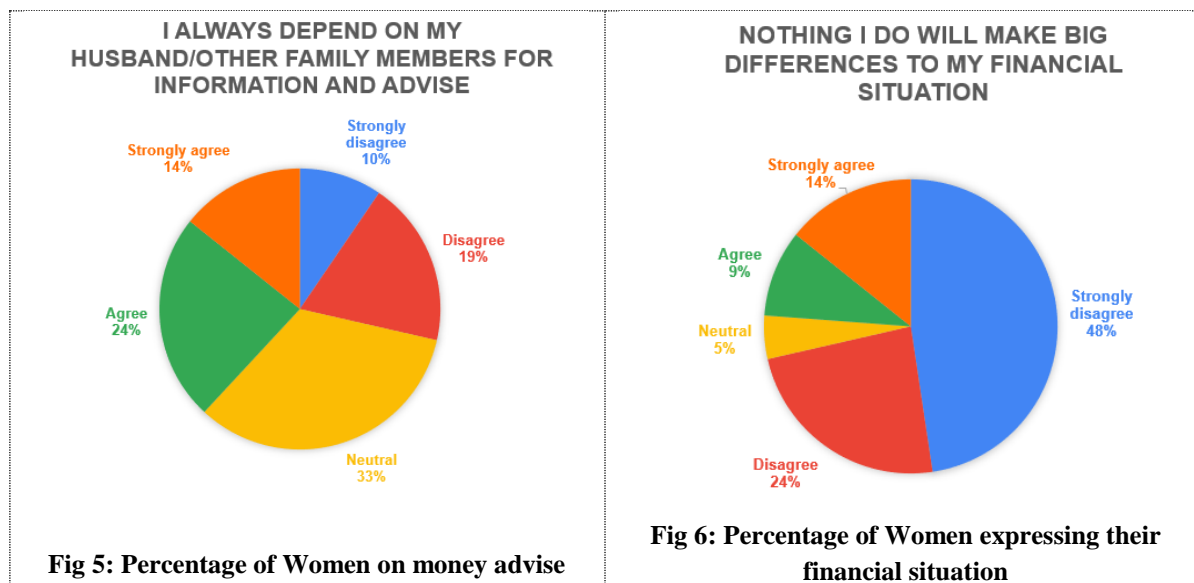


*Source: Researcher's Primary Data.*

The statement "I don't know where my money is being invested" (45%) is a common concern among Indian women as also echoed in Fig.4. “I don’t know the best ways to save my money” >50% confirm as per Fig.3. Many Indian women feel like they have no control over their finances and that their money is being invested in ways that they do not understand or approve of. This can lead to anxiety, stress, and financial insecurity.

Women still rely on others for financial decisions. This could be risky:

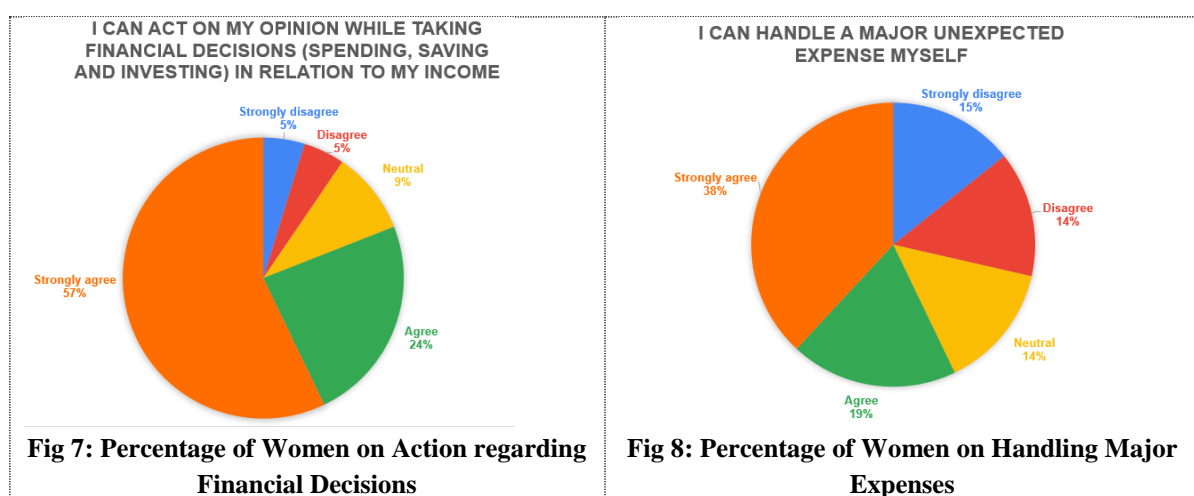
- They may not have your best interests in mind:
- They may not be qualified to give financial advice:
- They may not be up-to-date on the latest financial information:



*Source: Researcher's Primary Data*

The statement "Nothing I do will make a big difference to my financial situation" is a common belief among women in India, especially those who are poor or marginalized. This belief is often based on a number of factors, including: Lack of financial education, Gender stereotypes, Limited opportunities, Discrimination. Many women Fig 5. >70% still strongly depend on their spouses to make financial decisions

On the positive, we see that many women have claimed to being able to handle a major expense by themselves. Fig.7 57%: "Strongly Agree". This suggests that many women have the capability and willingness to manage significant financial obligations without relying on external support. The claim reflects a sense of financial empowerment among women, highlighting their ability to handle unexpected expenses and make important financial decisions autonomously.

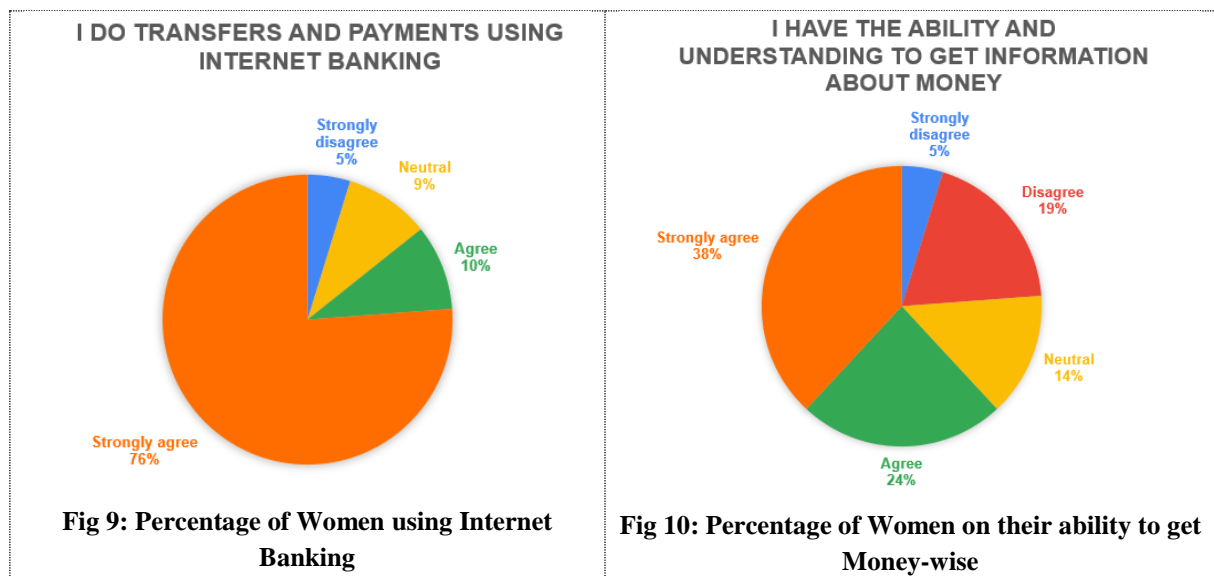


*Source: Researcher's Primary Data*

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28.607	16	0.0267
Likelihood Ratio - value	28.607	16	0.0915
Linear-by-Linear Association - value	28.607	16	0.0723
N of valid cases	20		

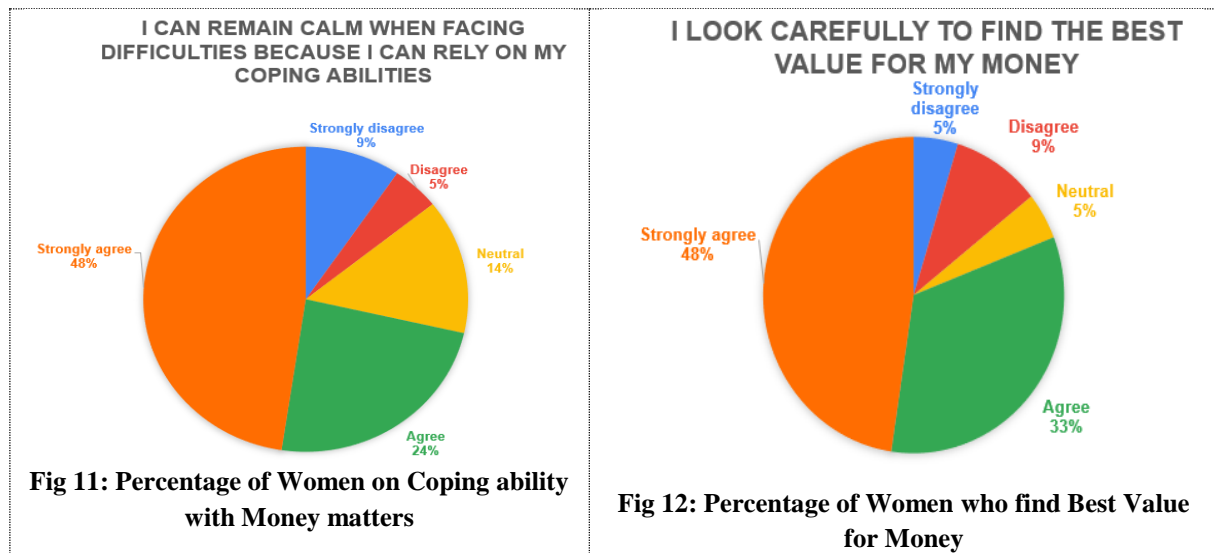
Based on the Chi-squared test results, there is strong statistical evidence to conclude that the ability to handle a major unexpected expense oneself is significantly associated with the ability to act on one's opinion while making financial decisions in relation to income. The low p-value indicates that the observed association between these two variables is unlikely to be due to chance. Instead, it suggests a meaningful and statistically significant relationship.

We also see that women are confident on getting the information they require. There are a number of resources available to them, including: Financial education programs offered by the government and financial institutions. These programs cover topics such as budgeting, saving, investing, and financial planning.



*Source: Researcher's Primary Data*

We also see that women are confident on getting the information they require. There are a number of resources available to them, including: Financial education programs offered by the government and financial institutions. These programs cover topics such as budgeting, saving, investing, and financial planning.



Source: Graphs produced based on Survey results of 20 working women of researcher's primary data

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26.428	16	0.0482
Likelihood Ratio - value	26.428	16	0.1561
Linear-by-Linear Association - value	26.428	16	0.12402
N of valid cases	20		

Based on the Chi-squared test results in this study, there is some statistical evidence to conclude that the ability to remain calm when facing difficulties because of coping abilities is associated with the tendency to look carefully to find the best value for money.

**Table 2: Correlation between Selected Columns**

		I usually budget for discretionary expenses	I keep track of my expenses regularly	I am disciplined at savings.	Thanks to my resourcefulness, I know how to handle unforeseen situations	If I am in financial trouble, I can usually think of a solution
I usually budget for discretionary expenses	Pearson Correlation	1	0.4779	0.4625	0.452	0.492
I keep track of my expenses regularly	Pearson Correlation	0.4779	1	0.4257	0.5095	0.6443
I am disciplined at savings.	Pearson Correlation	0.4625	0.4257	1	0.5481	0.5831
Thanks to my resourcefulness, I know how to handle unforeseen situations	Pearson Correlation	0.452	0.5095	0.5481	1	0.7709
If I am in financial trouble, I can usually think of a solution	Pearson Correlation	0.4924	0.6443	0.5831	0.7709	1

From the above Correlaion, we see there are significant positive relationships between these financial behaviors and attitudes. For example, individuals who budget for discretionary expenses tend to exhibit other positive financial behaviors like tracking expenses and disciplined savings. Additionally, resourcefulness in handling unforeseen situations is strongly linked to the ability to think of solutions in times of financial trouble.

## DISCUSSION

The negative statements “I am more of a saver than an investor”, “I keep my savings at home” “I don’t know the best ways to save my money” ‘I don’t know where my money is being invested”, “I always depend on my husband/other family members for information and advise” “Nothing I do will make big differences to my financial situation”. The statements presented reflect some negative financial attitudes and behaviors commonly observed among women. While being a saver is crucial, relying solely on savings might limit long-term financial growth. Encouraging women to explore basic investments can help diversify their savings. Storing savings at home exposes them to risks, making the use of formal banking services more secure. Addressing financial literacy gaps is essential to empower women to make informed money-saving decisions and understand their investments better. Encouraging financial independence and seeking advice from various sources can help women build confidence in managing their finances. Empowering women with financial knowledge and instilling a sense of agency can lead to small, consistent actions that positively impact their financial well-being. By adopting a multifaceted approach and providing support, organizations, policymakers, and communities can contribute to women's financial empowerment.

The statements "I can remain calm when facing difficulties because I can rely on my coping abilities," "I have the ability and understanding to invest money," "I can handle a major unexpected expense myself," and "I can act on my opinion while taking financial decisions (spending, saving, and investing) in relation to my income" all suggest that the woman in question is financially confident and empowered.

Financial confidence is the belief in one's ability to make sound financial decisions and achieve financial goals. Financial empowerment is the ability to control one's financial life and make decisions that are in one's best interests. Both financial confidence and empowerment are important for women's financial well-being.

The statements above suggest that the woman in question is confident in her ability to handle financial challenges, understands the basics of investing, is able to cover unexpected expenses, and is not afraid to make financial decisions that are in her best interests. These are all positive traits that can help her achieve her financial goals and live a financially secure life.

## CONCLUSIONS

In conclusion, this research paper sheds light on the critical role of financial empowerment among working women in India. The findings highlight that financial empowerment plays a significant role in enhancing the economic independence and overall well-being of women. Through improved financial literacy and access to formal financial services, working women can make informed decisions about savings, investments, and financial planning, leading to greater financial security and resilience.

The study identifies cultural norms, limited access to financial services, and lack of financial knowledge as barriers to financial empowerment. It underscores the importance of tailored financial education programs and policy initiatives to address these challenges and promote women's financial inclusion and empowerment.

The practical implications of these findings are that women who feel confident in handling unexpected financial expenses are also more likely to feel empowered to make independent financial decisions regarding spending, saving, and investing in alignment with their income. It also implies women who have confidence in their coping abilities are more likely to adopt a careful and value-conscious approach to financial decisions.

Furthermore, the research reveals the positive impact of financial empowerment on career advancement, entrepreneurship, and work-life balance for women. When women have control over their financial resources, they can invest in education, skill development, and business ventures, leading to enhanced economic contributions and reduced gender disparities in the workforce.

In conclusion, this research highlights that empowering working women financially is not only a matter of individual empowerment but also has broader implications for social and economic development. Policymakers, financial institutions, and stakeholders should collaborate to create an enabling environment that supports and empowers women in their financial journey, ultimately leading to a more inclusive and equitable society. By recognizing and addressing the specific challenges faced by working women in India, we can pave the way for their greater financial independence and prosperity.

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# **Impact of Self-Efficacy, Resilience, Role Clarity and Autonomy on Employee Engagement**

**Ravindra Dey\***

## **ABSTRACT**

Employee engagement is crucial for the success of organizations and transformation strategy for business growth. Individual factors and job design are important factors that can affect employee engagement levels. Today's companies prioritize employee engagement as they always look for new ways to keep their workforce motivated. Every day, the management's ability to maintain employee engagement while still carrying out the established policies is put to the test. The purpose of the study is to investigate how these factors relate to one another and how employee engagement levels are influenced. The research was quantitative in nature. The data for this study was collected from 114 participants through an online questionnaire form. The questionnaire consisted of 46 statements. The SPSS Software was used to analyse the data. data reliability, Karl Pearson's co-relation analysis, regression analysis, Independents Sample T-test and one-way ANNOVA have been used to reach results and come to conclusions. A positive correlation was found between the Self-Efficacy, Resilience, Role Clarity, Autonomy and Employee Engagement. The research tried to throw light on how these individual factors and job design affect level of employee engagement.

**Keywords:** *employee engagement, self-efficacy, resilience, role clarity, autonomy, transformation*

## **1. INTRODUCTION**

Dr. Charles Woodruffle believes that having a workforce that is highly motivated and fully engaged in their work is the most potent competitive advantage that any organization can possess. In today's business landscape, companies face significant challenges in achieving commercial success due to increased competition, globalization, economic instability, the need for ongoing adaptation, and the war for talent. The psychological contract between employers and employees has evolved, and job security is no longer a given. Expectations of both employers and employees have changed, making employee engagement a crucial factor in determining long-term success in these challenging times. Engaged employees are the backbone of a productive work environment, characterized by diligence, ethical behaviours, and accountability. Therefore, there is a growing realization that employee engagement is a crucial element in achieving successful business outcomes. Companies prioritize employee engagement and constantly explore new strategies to maintain employee motivation, while adhering to established regulations. However, the challenge of retaining employee engagement and reducing turnover rates persists, as the job market becomes increasingly fluid.

*\* Professor, Xavier Institute of Management and Research, Mumbai*

### **1.1 Statement of the Problem**

Organizational performance depends on employee engagement, and individual characteristics can have a significant impact on employee engagement levels. The purpose of this study is to determine how personal characteristics like self-efficacy and resilience and job design like Role Clarity and Autonomy affects employee engagement.

### **1.2 Purpose and Scope of the Study**

- i. The aim of the study is to examine how resilience and self-efficacy affect employee engagement in organizations.
- ii. The purpose of the study is to investigate how these factors relate to one another and how employee engagement levels are influenced.
- iii. The aim of the study is to examine how Autonomy and Role Clarity affect employee engagement in organizations.
- iv. The purpose of the study is to investigate how these factors relate to one another and how employee engagement levels are influenced.

### **1.3 Research Questions**

- i. Is there a relationship between Self-Efficacy and Employee Engagement?
- ii. Is there a relationship between Resilience and Employee Engagement?
- iii. Is there a difference between Engagement level of Male and Female?
- iv. Is there a relationship between Autonomy and Employee Engagement?
- v. Is there a relationship between Role Clarity and Employee Engagement?
- vi. Is there a difference between Level of Autonomy of Male and Female Employees?
- vii. Is there a difference between Level of Engagement of Senior, Middle and Junior Level employees?

## **2. LITERATURE REVIEW**

### **2.1 Employee Engagement**

Employees who are engaged see the value of their efforts and care about what they do in order to help their employer and the organization function well. It is very important to note that an organization's chances of success increase with the level of employee involvement. This is because employees are the organization's tangible assets, and the more they are given a voice in decisions that are made, the more dedicated they are. (Adekoya et al, 2019)

The level of employee engagement within an organization is a key indicator of its positive work culture, as committed employees who feel a sense of loyalty towards their workplace tend to exhibit high levels of enthusiasm and dedication, often exceeding the expectations outlined in their job descriptions. (Arifin et al, 2021). A psychologically secure work environment is crucial in boosting employee engagement, as it impacts how individuals experience happiness

and enthusiasm in their work tasks. (Osborne and Hammoud, 2017). Employee engagement significantly impact organizational productivity, commitment, and customer satisfaction, business reputation, and brand image, highlighting the interconnectedness between engaged employees and satisfied customers. (Mehta and Mehta, 2013).

## **2.2 Self-Efficacy**

Self-efficacy, or an individual's belief in their ability to perform a specific task or activity, is a crucial element of human resources that directly impacts an individual's effectiveness in achieving organizational goals, serving as the foundation for motivation, personal accomplishment, and self-regulation, ultimately resulting in higher performance and influencing other employees in a positive manner. (Nusannas et al, 2020)

It has also been discovered that individual differences such generalized self-efficacy, conscientiousness, and positive affect have a direct relationship with engagement and commitment. Engagement is closely related to self-efficacy. The findings support the theoretical position that generalized self-efficacy is a crucial human resource that both directly and indirectly influences motivational and performance-related outcomes. (Albrecht & Marty, 2017)

The relationship between self-efficacy and performance suggests that higher levels of self-efficacy positively impact performance, and it also plays a significant role in improving performance, as both intrinsic variables directly influence employee performance, which is also affected by extrinsic factors. By increasing employees' belief in their abilities and fostering a sense of involvement and commitment, organizations can boost enthusiasm and motivation levels, ultimately improving performance. (Arifin et al, 2021; Nusannas et al, 2020).

## **2.3 Resilience**

The field of resilience is dynamic, multifaceted, and multifunctional. It describes a person's capacity for overcoming hardship after going through a trying time at work or in their home. Researchers have focused on how a worker might increase their resilience. They wonder whether resilience is a natural trait or a skill that can be learned. (Thamarat Jangsiriwattana, 2021)

Regression analyses have identified the PsyCap dimensions (Hope, Optimism, Self-Efficacy, and Resilience) that best predict variations in employee engagement. Investing in employee development by focusing on the optimal construct can maximize output and raise employee engagement levels. Enhancing resilience through the development of PsyCap constructs can protect against burnout and improve work performance, benefiting the organization. (Marthine Herbert, 2011).

Permanent employees were found to be more resilient and engaged, while those on fixed-term

contracts were more driven and had better working relationships with their managers (Julie Mulliner, 2018). Self-efficacy was found to be associated with job engagement, and highly self-efficacious workers are more likely to bounce back from stress and increase their engagement (Ojo et al, 2021).

## **2.4 Role Clarity**

Role clarity refers to employees' understanding of their job responsibilities and duties. When employees have a clear understanding of their role and job expectations, they are more likely to be engaged and committed to their work. It also reduces uncertainty and helps employees adjust to a new work environment. Organizations should establish role clarity early on in an employee's tenure to promote job dedication and strong working relationships. (Jefferson and Riley, 2020).

Effective employee engagement has a positive impact on creative work behaviour and reduces employee turnover. Companies should promote commitment, job satisfaction, and community. Role clarity is crucial for leadership relationships, requiring leaders to define their value proposition and communicate performance standards. Open communication is also essential for ensuring adequate task knowledge. (Chandani et al., 2016; Towsen et al., 2002). The study found no positive relationships between the five behavioral components of job design and employee engagement for Sri Lanka Administrative Service Officers. Some negative relationships were observed. Autonomy was most closely associated with employee engagement. (Dissanayake and Jayatilake, 2019).

## **2.5 Autonomy**

Autonomy in the workplace is increasingly important due to globalization, changing employment patterns, and complex organizational structures. Autonomy encourages innovation and adaptation, resulting in increased engagement and meaningful job experiences. (Bhave and Gagné, 2011; Pooja Garg et al, 2020). Work becomes psychologically yours when you have job autonomy. This is due to the fact that in a job with high levels of autonomy, the results of the work are determined by the jobholder's actions and decisions rather than by orders from their superior. (Shantz eta, 2013). Workplace autonomy provides more freedom and discretion, allowing individuals to try new things and boost innovation. It is an essential component of work design. (Dixit and Swaroop, 2018).

Job autonomy plays a mediating role in the relationship between transformational leadership and work engagement (Gözükara1 & Şimsek, 2015). Followers require autonomy for personal development and peak performance. Transformational leaders can increase follower autonomy, resulting in job satisfaction and increased engagement. However, many workers lack independence and initiative in their duties (Lin and Ping, 2016). Managers should provide necessary tools for subordinates to achieve autonomy, leading to greater commitment and meaningfulness. Supervisory support can also increase job autonomy and responsibility, resulting in increased engagement. (Kariuki & Makori, 2015).

According to studies, organizational elements like communication, employee well-being, and employee development and corporate culture have an impact on employee engagement. There aren't many academic studies that have looked at aspects of Role clarity, autonomy, Resilience and Self Efficacy, as a factor that will influence the degree of employee engagement in an organization. Past research on this topic was mostly in a global context.

### **3. RESEARCH METHODOLOGY**

#### **3.1 Research Design**

The study is quantitative in nature. The systematic exploratory approach of empirical observation using statistical, mathematical, or computational techniques is known as quantitative research. The goal of quantitative research is to create and use mathematical theories, models, and/or hypotheses related to phenomena. The measurement procedure is crucial to quantitative research because it establishes the essential link between empirical observation and the mathematical expression of quantitative connections.

#### **3.2 Research Variables**

The variables used for this study included Employee Engagement, Self-Efficacy, Resilience, Role Clarity and Autonomy. Self-Efficacy, Resilience, Role Clarity and Autonomy are the independent variables while Employee Engagement is the dependent variable.

#### **3.3 Hypothesis**

A hypothesis is a statement that can be verified through scientific investigation. The goal of this study is to determine how resilience and self-efficacy affect employee engagement. As a result, the proposed hypothesis accurately anticipates the research's findings, which are further supported by statistical testing.

H01a: There is no significant relationship between Self Efficacy and Employee Engagement.

H01b: There is no significant relationship between Resilience and Employee Engagement.

H01c: There is no significant difference between Engagement level of Male and Female.

H01d: There is no significant relationship between Autonomy and Employee Engagement.

H01e: There is no significant relationship between Role Clarity and Employee Engagement.

H01f: There is no significant difference between Autonomy level of Male and Female.

H01g: There is no significant difference between level of engagement of senior, middle and junior level employees.

#### **3.4 Research Method**

### **3.4.1 Instruments**

#### ***3.4.1.1 Employee Engagement***

Employee Engagement was assessed using *DDI's E3 Scale*, a 20-item instrument. Using a five-point likert scale, respondents were asked to score how strongly they agree or disagree with the statements (1=Strongly Disagree to 5 = Strongly Agree). Aligning efforts with strategy is indicated by statements 1 through 5, empowerment by statements 6 through 8, teamwork and collaboration by statements 12 through 14, development plans by statements 15 through 17, support and recognition by statements 16 through 20, and satisfaction and loyalty by statements 19 through 20.

#### ***3.4.1.2 Self-Efficacy***

*The General Self-Efficacy Scale (GSE)*, which has ten items, was used to measure self-efficacy. Using a five-point likert scale, respondents were asked to assess how strongly they agree or disagree with the statement (1=Strongly Disagree to 5=Strongly Agree). The total score runs from 10 to 40; a higher number denotes higher self, while a lower score denotes lower self-efficacy.

#### ***3.4.1.3 Resilience***

*The Brief Resilience Scale*, which consists of four items, was used to measure resilience. Respondents were asked to rate how much they agree or disagree with the statements using a five-point likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Scores for the total sum vary from 4 to 20. Scores of 4–13 show a low level of coping resilience, 14–16 indicate a medium level, and 17–20 indicate a high level of coping resilience.

#### ***3.4.1.4 Role Clarity***

Role Clarity was assessed using the *General Nordic Questionnaire (GNQ)*, which comprises six items. Responses were rated on a five-point likert scale for how strongly they agree or disagree with the statement (1=Strongly Disagree to 5=Strongly Agree). Higher scores meant that the role was more clearly defined.

#### ***3.4.1.5 Autonomy***

Autonomy was assessed using six items from the *Work Climate Questionnaire (WCQ)*. Using a five-point likert scale, respondents were asked to score how strongly they agree or disagree with the statements (1 = Strongly Disagree to 5 = Strongly Agree). Higher scores denoted a higher degree of autonomy.

### **3.4.2 Participants**

The sample consisted of 114 respondents. The total female respondents were 51 and male respondents were 63. The age groups were split into four categories, with respondents falling into the age group and the categories 18–25, 26–41, 42–57, and above 57. The work experience of participants was divided into 5 categories, with respondents belonging to the total work experience group and respondents belonging <1 year, 1 - 5 years, 5 - 10 years, 10 - 15 Years, and >15 years. Also, the respondents were sorted into three levels: senior level, middle level, and junior level.

### **3.4.3 Data Collection**

A questionnaire was converted into a Google form and disseminated online via email and social media. Digital recordings of the responses were made concurrently. To gather the data for this research, both primary and secondary data sources were used. The questionnaire was used to gather the direct data that makes up the primary source. A survey questionnaire with 46 items was created, converted to a Google form, distributed via email and social media, and responses were digitally recorded as part of a quantitative strategy to gathering primary data. The study used a sample of 114 people. Research papers and related internet publications are among the secondary data sources.

## **4. RESULTS AND DISCUSSIONS**

### **4.1 Overview**

Table 1 provides demographic information on the sample of 114 respondents, where 55.3% were men and 44.7% were women. The respondents were categorized by age, group, job level, and Total work experience.

For Analysis of data SPSS tool was used. Different statistical tests were performed to verify different hypothesis. Firstly, the reliability test was performed to verify the reliability of the data. Co-relation and ANOVA were used for testing the rest of the hypothesis.

### **4.2 Results**

#### **4.2.1 Reliability analysis**

Data reliability was tested using the reliability test as shown in Table 3. Cronbach's Alpha reliability index was used to evaluate internal consistency of each construct. The reliability for the sample was found to be 0.939.

#### **4.2.2 Correlation and Regression Analysis**

**H01a: There is no significant relationship between Self-Efficacy and Employee Engagement.**

To deduce the relationship between the two variables- Self Efficacy and Employee Engagement, Karl Pearson's coefficient of correlation was calculated and it turned out to be moderately significant. The value of  $r$  was found to be 0.513. Karl Pearson's correlation indicates that there is a positive correlation between self-efficacy and Employee Engagement. A change in one variable will lead to change in variable of other. Further Regression Analysis was also used to predict the relationship between employee engagement and self-efficacy. Which can be done by calculating R squared. R squared measure is a statistical measure to check the variation in dependent variable by the independent variable. Regression analyses of these two variables indicate that 0.263 change in employee engagement can be accounted by Self-Efficacy. There is a significant impact of Self – efficacy on employee engagement. The dependent Variable employee engagement was regressed on predicting variables self- efficacy, F-Value = 40.007 and p value less than 0.05 which indicates that self-efficacy plays a significant role in level of employee engagement (Beta = 0.513, p value of 0.001 which is lesser than 0.05) (Refer Table 4 and 5).

Hence, the null hypothesis stating that: There is no significant relationship between Self-Efficacy and Employee Engagement is rejected.

#### **H01b: There is no significant relationship between Resilience and Employee Engagement.**

To deduce the relationship between the two variables- Resilience and Employee Engagement, Karl Pearson's coefficient of correlation was calculated and it turned out to be moderately significant. The value of  $r$  was found to be 0.490. Karl Pearson's correlation indicates that there is a positive correlation between Resilience and Employee Engagement. A change in one variable will lead to change in variable of other. Further Regression Analysis was also used to predict the relationship between employee engagement and Resilience. Which can be done by calculating R squared. R squared measure is a statistical measure to check the variation in dependent variable by the independent variable. Regression analyses of these two variables indicate that 0.240 change in employee engagement can be accounted by Resilience. There is a significant impact of Resilience on employee engagement. The Dependent Variable employee engagement was regressed on predicting variables Resilience, F-Value = 35.318 and p value less than 0.05 which indicates that Resilience plays a significant role in level of employee engagement (Beta = 0.490, p value of 0.001 which is lesser than 0.05) (Refer Table 4 and 6).

Hence, the null hypothesis stating that: There is no significant relationship between Resilience and Employee Engagement is rejected.

#### **H01c: There is no significant difference between Engagement level of male and female employees.**

For the Overall EE measure, the average score for both groups is similar, with males having a slightly higher mean score of 4.04 compared to females with a mean score of 4.00. The standard deviation for males (0.631) is also slightly smaller than that of females (0.741), indicating less variability in male scores. Further the t-test for equality of means, which assesses whether the



mean score for males is significantly different from the mean score for females on the Overall EE measure was conducted. The test results show that the p-value is greater than .05, which means that there is not a significant difference between the mean scores for males and females on the Overall EE measure. Additionally, the confidence interval for the mean difference (from -0.220 to 0.298) includes zero, which further supports the finding that there is not a significant difference between the mean scores for males and females. The statistical tests suggest that there is not a significant difference between the mean scores for males and females on the Overall EE measure of emotional intelligence.

Hence, the null hypothesis stating that: There is no significant difference between Engagement level of Male and Female is accepted.

**H01d: There is no significant relationship between Autonomy and Employee Engagement.**

To deduce the relationship between the two variables- Autonomy and Employee Engagement, Karl Pearson's coefficient of correlation was calculated and it turned out to be moderately significant. The value of  $r$  was found to be 0.560. Karl Pearson's correlation indicates that there is a positive correlation between Autonomy and Employee Engagement. A change in one variable will lead to change in variable of other. Further Regression Analysis was also used to predict the relationship between employee engagement and Autonomy. Which can be done by calculating R squared. R squared measure is a statistical measure to check the variation in dependent variable by the independent variable. Regression analyses of these two variables indicate that 0.314 change in employee engagement can be accounted by Autonomy. There is a significant impact of Autonomy on employee engagement. The dependent Variable employee engagement was regressed on predicting variables Autonomy, F-Value = 51.284 and p value less than 0.05 which indicates that Autonomy plays a significant role in level of employee engagement (Beta = 0.560, p value of 0.001 which is lesser than 0.05) (Refer Table 4 and 5).

Hence, the null hypothesis stating that: There is no significant relationship between Autonomy and Employee Engagement is rejected.

**H01e: There is no significant relationship between Role Clarity and Employee Engagement.**

To deduce the relationship between the two variables- Role Clarity and Employee Engagement, Karl Pearson's coefficient of correlation was calculated and it turned out to be moderately significant. The value of  $r$  was found to be 0.338. Karl Pearson's correlation indicates that there is a positive correlation between Role Clarity and Employee Engagement. A change in one variable will lead to change in variable of other. Further Regression Analysis was also used to predict the relationship between employee engagement and Role Clarity. Which can be done by calculating R squared. R squared measure is a statistical measure to check the variation in dependent variable by the independent variable. Regression analyses of these two variables indicate that 0.114 change in employee engagement can be accounted by Role Clarity. There is

a significant impact of Role Clarity on employee engagement. The Dependent Variable employee engagement was regressed on predicting variables Role Clarity, F-Value = 14.474 and p value less than 0.05 which indicates that Role Clarity plays a significant role in level of employee engagement (Beta = 0.338, p value of 0.001 which is lesser than 0.05) (Refer Table 4 and 6).

Hence, the null hypothesis stating that: There is no significant relationship between Role Clarity and Employee Engagement is rejected.

**H01f: There is no significant difference between Autonomy level of male and female employees.**

The analysis is trying to compare the level of autonomy between two groups of people - male and female. The results show that, on average, female participants had a slightly higher level of autonomy than male participants. However, the statistical tests performed did not find a significant difference in the level of autonomy between the two groups. Two statistical tests are provided in the section titled "Independent Samples Test". Whether the two groups have equal variances is determined by the first test, Levene's Test for Equality of Variances. The results of the test indicate that there is a substantial variance difference between the two groups ( $F = 4.272$ ,  $p = .041$ ), indicating that the assumption of equal variances should not be used. This means that while the average score was higher for female participants, the range of scores in the female group was wider, which could suggest that the difference in the average score was due to chance. If there is a statistically significant difference between the two groups' mean scores, the second test, the t-test for Equality of Means, is performed. A t-value of 1.196 and a p-value of .234 from the test assuming equal variances are displayed in the top row of data, suggesting that there is no statistically significant difference in the means between the two groups. With a t-value of 1.241 and a p-value of .217, the test performed without assuming equal variances still demonstrates that there is no significant difference in the means between the two groups. This test showed that there was no significant difference in the level of autonomy between the two groups, regardless of whether the assumption of equal variance was made or not. According to the statistical analysis, there is no statistically significant difference between the two groups' mean scores on the variable level of autonomy. (Refer Table 7)

Hence, the null hypothesis stating that: There is no significant difference between level of autonomy in Male and Female is accepted.

**H01g: There is no significant difference between level of engagement of senior, middle and junior level employees.**

The table 8 shows the results of an analysis of the average scores for a variable called employee engagement among three groups. The table includes descriptive statistics, such as the mean (average), standard deviation (a measure of the spread of scores), and minimum and maximum scores for each group, as well as overall statistics such as the ANOVA. The ANOVA (analysis of variance) compares the average scores between the three groups to determine if there is a

significant difference in scores between them. The results of the ANOVA show that there is a statistically significant difference in the average scores between the three groups ( $F(2,111) = 5.447, p = .006$ ). This means that the differences in average scores between the groups are not likely due to chance. The results of the ANOVA showed that there was a significant difference in the average employee engagement scores between the three groups. This means that there was a real difference in employee engagement levels between the groups, and that it was not just due to chance. The significant F-value of 5.447 and a p-value of .006 indicate that the average scores among the three groups are statistically different.

Hence, the null hypothesis stating that: There is no significant difference in the level of engagement of Senior, Middle and Junior is rejected.

### **4.3 Discussion**

#### **Self-Efficacy and Employee Engagement**

The study found a positive correlation between self-efficacy and employee engagement, indicating that workers who believe in their capacity to do the job are more committed and engaged. The regression analysis also revealed that self-efficacy has a significant impact on employee engagement, implying that companies can enhance engagement by implementing self-efficacy-building interventions. These could include coaching and mentoring programs, training and development opportunities, and clear expectations. Research also suggests that employees with higher levels of self-efficacy are more motivated, set challenging goals, and persevere in the face of difficulties, while being less stressed and burnt out, leading to higher levels of engagement and job satisfaction.

#### **Resilience and Employee Engagement**

The study reveals that employees with greater resilience are more likely to be engaged at work as they can better handle work stressors and challenges, leading to greater dedication and interest in their profession. Resilience has a significant impact on employee engagement, and organizations should focus on fostering and enhancing their employees' resilience to improve engagement and overall performance while reducing turnover. Employers can promote resilience by offering development opportunities, encouraging work-life balance, providing mental health support, and cultivating a supportive workplace. By investing in their employees' resilience, organizations can enhance engagement, performance, and wellbeing.

#### **Engagement level of Male and Female Employees**

The study found that the levels of employee engagement were similar between male and female employees, with males having a slightly higher mean score. However, the difference was not statistically significant, indicating that it could be due to chance. Thus, gender-specific issues related to employee engagement may not be a major concern. Nevertheless, organizations should strive to promote inclusivity and equity by eliminating potential biases and barriers, providing equal opportunities for development and advancement, ensuring fair compensation

and benefits, and fostering a culture of respect and diversity. These measures can help to create a more equitable and supportive workplace for all employees.

### **Autonomy and Employee Engagement**

The study found a positive relationship between autonomy and employee engagement, with higher levels of autonomy leading to increased engagement. Autonomy was found to account for 31.4% of the variation in employee engagement. This suggests that organizations can promote engagement by providing employees with more control over their work. However, it's important to integrate autonomy with other factors such as effective leadership, company culture, and opportunities for growth and learning, and ensure it aligns with the business's goals and objectives. These findings have significant implications for businesses, including increased productivity, staff retention, and organizational commitment.

### **Role Clarity and Employee Engagement**

The study found a positive correlation between Role Clarity and Employee Engagement, suggesting that employees who have a clear understanding of their job responsibilities are more engaged. Role Clarity significantly affects Employee Engagement, indicating that it is a critical factor in employee satisfaction and commitment. To enhance Role Clarity and Employee Engagement, companies can provide clear job descriptions and performance standards, conduct regular feedback and performance reviews, and promote an open and honest workplace culture that fosters communication and teamwork. Establishing a sense of accountability and responsibility can improve trust and communication between employees and their superiors, leading to increased engagement. This has implications for companies, including improved productivity, employee retention, and organizational success.

### **Autonomy level of Male and Female Employees**

The study aimed to compare the level of autonomy between male and female participants. According to the statistical research, there is no discernible difference between the autonomy levels of men and women. Although the average score for the female participants was somewhat higher, the range of results in the female group was broader, which would indicate that the difference in the average score was merely a matter of chance. Since there was no apparent disparity in the level of autonomy between the two groups according to the statistical tests, the difference in average score can be attributed to random fluctuation.

### **Level of Engagement of senior, middle and junior level employees**

The study found significant differences in employee involvement levels among three groups, indicating actual disparities in engagement levels. Organizations can use this information to develop targeted interventions and strategies to improve employee engagement by understanding the factors that contribute to higher levels of engagement. Understanding these differences can help organizations develop more effective engagement initiatives and promote a more engaged and productive workforce. In summary, identifying and addressing disparities

in engagement levels among different groups can lead to more effective employee engagement initiatives and better overall organizational performance. This can benefit both employees and employers alike.

## **5. LIMITATIONS, RECOMMENDATIONS AND DIRECTION**

### **5.1 Limitations**

The size of the sample was 114 because of which the statistical tests would have not been able to identify the significant relationships between the parameters which further reduces the scope of the study. A bigger sample size sets out an opportunity for a more accurate data.

- i. Different measures of Self-Efficacy, Resilience, Autonomy and Role Clarity can be used.
- ii. The study was limited to factors like Self – Efficacy, Resilience, Role Clarity and Autonomy

Research on self-efficacy, resilience, role clarity and autonomy may not account for other elements that could affect employee engagement, such as leadership style, corporate culture, or job happiness. This can make it more difficult to determine how resilience, self-efficacy, role clarity, autonomy and employee engagement are related.

Sometimes the respondents don't give accurate responses to the data. This element may affect the data gathered and the ultimate outcome. Another flaw in this study is the researcher's inexperience, which may have resulted in the omission of several crucial components that could have enhanced the study's overall impact.

### **5.2 Recommendations and Future Scope of Research**

While the study on the relationship between self-efficacy, resilience, role clarity, autonomy and employee engagement offers some insightful information, there are significant shortcomings and room for improvement. The relatively small sample size of 114 responders is one of the major drawbacks. Insights into the effects of self-efficacy, resilience, role clarity and autonomy on employee engagement may be improved with a bigger sample size and more representative demographic section.

However, the study only looked at four values—self-efficacy, resilience, role clarity and autonomy—and neglected to include other elements that can influence employee engagement, such as management style, workplace culture, or job satisfaction. These elements may have a substantial impact on employee behaviour and attitudes, therefore further study into how they affect employee engagement is possible. More insights into how various elements interact to affect employee engagement in firms may come from examining the nature of the link between various demographic parameters, such as age and experience level.

## 6. CONCLUSION

Employee engagement is a crucial factor in today's competitive business environment. Engaged employees are more committed, productive, and satisfied with their jobs, leading to improved business outcomes. Self-efficacy, Resilience, Role Clarity and Autonomy are essential elements in employee engagement, as employees who possess these qualities are more motivated, productive, and satisfied with their work. Gender may not be a factor that needs to be addressed when promoting employee engagement, as there is no significant difference in engagement levels between male and female employees. Organizations can promote self-efficacy and resilience through coaching and mentoring programs, training, and the establishment of clear expectations. Investing in these areas can increase engagement, performance, and well-being, while reducing turnover and burnout rates. For autonomy and role clarity Organizations should implement it in a strategic manner, as well as address disparities in employee engagement levels among different employee groups. Providing employees with autonomy and role clarity can have positive effects on the organization, including better staff retention, productivity, and a stronger sense of organizational commitment. Organizations should prioritize providing employees with a sufficient level of autonomy and role clarity to promote engagement. This can be achieved by giving employees the freedom to make decisions, encouraging open communication, providing clear job descriptions, and offering training and development opportunities to enhance employees' skills and knowledge. Furthermore, organizations should recognize that autonomy and role clarity are not one-time actions but an ongoing process. Employees' roles and responsibilities may change over time, and it is essential to provide continuous feedback and support to ensure employees have a clear understanding of their role within the organization.

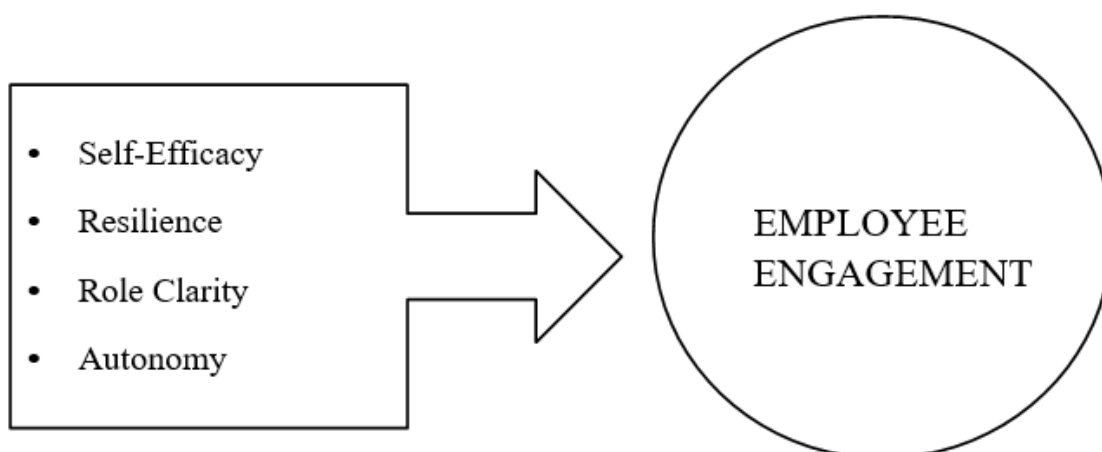
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## ANNEXURES



**Figure 1: Employee Engagement – Conceptual Framework**

**Table 1: Demographic Profile of Respondents**

SN	Demographic Factors					
1	Age	18-25	26-41	42-57	Above 57	
		43	40	29	2	
2	Gender	Male		Female		
		63		51		
3	Level	Senior Level	Middle Level		Junior Level	
		27	52		35	
4	Total Work Experience	<1 Year	1-5 Years	5-10 Years	10-15 Years	>15 Years
		25	24	12	12	41

**Table 2: Descriptive Statistics**

	N	Mean	Std. Deviation	Variance
OVERALL EE Avg Score	114	4.02	.691	.478
SE Avg Score	114	4.04	.547	.300
RESILIENCE Avg Score	114	4.04	.547	.300
INDIVIDUAL FACTORS Overall Avg	114	4.05	.593	.351

**Table 3: Reliability Statistics**

Cronbach's Alpha	N of Items
.939	46



**Table 4: Correlations (Employee Engagement, Resilience, Self-Efficacy)**

Correlations				
	OVERALL EE Avg Score	SE Avg Score	RESILIENCE Avg Score	INDIVIDUAL FACTORS Overall Avg
OVERALL EE Avg Score	1	.513**	.490**	.560**
		0	0	0
	114	114	114	114
SE Avg Score	.513**	1	.557**	.867**
	0		0	0
	114	114	114	114
RESILIENCE Avg Score	.490**	.557**	1	.731**
	0	0		0
	114	114	114	114
INDIVIDUAL FACTORS Overall Avg	.560**	.867**	.731**	1
	0	0	0	
	114	114	114	114
**. Correlation is significant at the 0.01 level (2-tailed).				

**Table 5: Regression Analysis for Self-Efficacy**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.513 <sup>a</sup>	0.263	0.257	0.596

a. Predictors: (Constant), SE Avg Score

ANOVA <sup>a</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	14.203	1	14.203	40.007	.000 <sup>b</sup>
	Residual	39.762	112	0.355		
	Total	53.965	113			
a. Dependent Variable: EE Avg Score						
b. Predictors: (Constant), SE Avg Score						

Coefficients <sup>a</sup>						
Model	Unstandardized Coefficients			Standardized Coefficients		Sig.
	B	Std. Error		Beta	t	
1	(Constant)	1.404	0.417		3.368	0.001
	SE Avg Score	0.648	0.102	0.513	6.325	0
a. Dependent Variable: EE Avg Score						

**Table 6: Regression Analysis for Resilience**

<b>Model Summary</b>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.490 <sup>a</sup>	0.24	0.233	0.605
a. Predictors: (Constant), RESILIENCE Avg Score				

<b>ANOVA<sup>a</sup></b>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.937	1	12.937	35.318	.000 <sup>b</sup>
	Residual	41.027	112	0.366		
	Total	53.965	113			
a. Dependent Variable: EE Avg Score						
b. Predictors: (Constant), RESILIENCE Avg Score						

<b>Coefficients<sup>a</sup></b>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.523	0.424		3.597	0
	RESILIENCE Avg Score	0.618	0.104	0.49	5.943	0
a. Dependent Variable: EE Avg Score						

**Table 7: T-test for Gender and Employee Engagement analysis**

<b>Group Statistics</b>					
Gender Code		N	Mean	Std. Deviation	Std. Error Mean
EE Avg Score	0	51	4.04	0.631	0.088
	1	63	4	0.741	0.093
SE Avg Score	0	51	3.92	0.483	0.068
	1	63	4.13	0.582	0.073
RESILIENCE Avg Score	0	51	3.88	0.475	0.067
	1	63	4.16	0.574	0.072

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
EE Avg Score	Equal variances assumed	0.422	0.517	0.3	112	0.765	0.039	0.131	-0.22	0.298
	Equal variances not assumed			0.305	111.681	0.761	0.039	0.129	-0.215	0.294
SE Avg Score	Equal variances assumed	1.631	0.204	2.019 <sup>-</sup>	112	0.046	-0.205	0.102	-0.407	-0.004
	Equal variances not assumed			2.059 <sup>-</sup>	111.912	0.042	-0.205	0.1	-0.403	-0.008
RESILIENCE Avg Score	Equal variances assumed	2.779	0.098	2.758 <sup>-</sup>	112	0.007	-0.276	0.1	-0.475	-0.078
	Equal variances not assumed			2.813 <sup>-</sup>	111.931	0.006	-0.276	0.098	-0.471	-0.082

**Table 8: Correlations (Employee Engagement, Role Clarity, Autonomy)**

Correlations				
		AUTONOMY	ROLE CLARITY	EMPLOYEE ENGAGEMENT
AUTONOMY	Pearson Correlation	1	.222 <sup>*</sup>	.560 <sup>**</sup>
	Sig. (2-tailed)		0.018	0
	N	114	114	114
ROLE CLARITY	Pearson Correlation	.222 <sup>*</sup>	1	.338 <sup>**</sup>
	Sig. (2-tailed)	0.018		0
	N	114	114	114
OVERALL EE	Pearson Correlation	.560 <sup>**</sup>	.338 <sup>**</sup>	1
	Sig. (2-tailed)	0	0	
	N	114	114	114
*. Correlation is significant at the 0.05 level (2-tailed).				
**. Correlation is significant at the 0.01 level (2-tailed).				

**Table 9: Regression Analysis for Autonomy**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.560 <sup>a</sup>	0.314	0.308	0.575
a. Predictors: (Constant), AUTONOMY Avg Score				

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.949	1	16.949	51.284	.000 <sup>b</sup>
	Residual	37.016	112	0.33		
	Total	53.965	113			
a. Dependent Variable: EE Avg Score						
b. Predictors: (Constant), AUTONOMY Avg Score						

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.989	0.288		6.899	0
	AUTONOMY Avg Score	0.525	0.073	0.56	7.161	0
a. Dependent Variable: EE Avg Score						

**Table 10: Regression Analysis for Role Clarity**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.338 <sup>a</sup>	0.114	0.107	0.653
a. Predictors: (Constant), ROLE CLARITY Avg Score				

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.176	1	6.176	14.474	.000 <sup>b</sup>
	Residual	47.789	112	0.427		
	Total	53.965	113			
a. Dependent Variable: EE Avg Score						
b. Predictors: (Constant), ROLE CLARITY Avg Score						

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.062	0.518		3.984	0
	ROLE CLARITY Avg Score	0.504	0.133	0.338	3.804	0
a. Dependent Variable: EE Avg Score						

**Table 11: T-test for Gender and Autonomy analysis**

Group Statistics					
Gender Code	N		Mean	Std. Deviation	Std. Error Mean
AUTONOMY	0	51	3.95425	0.58602	0.08206
	1	63	3.78836	0.83773	0.10554

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
<b>AUTONOMY</b>	Equal variances assumed	4.272	0.041	1.196	112	0.234	0.165889	0.13865	0.1088285	0.4406057
	Equal variances not assumed			1.241	109.842	0.217	0.165889	0.1336914	0.0990606	0.4308377

**Table 12: One Way ANOVA test**

Descriptive					
OVERALL EE Avg Score					
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean
					Lower Bound
1	35	3.74	0.741	0.125	3.49
2	52	4.06	0.608	0.084	3.89
3	27	4.3	0.669	0.129	4.03
<b>Total</b>	<b>114</b>	<b>4.02</b>	<b>0.691</b>	<b>0.065</b>	<b>3.89</b>

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
<b>AUTONOMY</b>	Equal variances assumed	4.27	0.04	1.2	112	0.234	0.1658886	0.13865	0.108829	0.440606
	Equal variances not assumed			1.24	109.84	0.217	0.1658886	0.1336914	0.099061	0.430838

# **A Study of Fundamental and Technical Analysis of Companies in the FMCG Sector**

**Aditya Kukade\***

**Shailja Badra\*\***

## **ABSTRACT**

This research paper comprehensively examines the effective utilization of both fundamental and technical analysis for identifying lucrative investment opportunities within the FMCG sector. The study focuses on assessing the intrinsic value of the top ten FMCG companies listed with the National Stock Exchange. These companies are ranked based on their market capitalization, and the assessment is conducted through a meticulous analysis of ratio metrics, price multiples, and pivotal economic indicators. By utilizing these analytical tools, the research successfully identifies overvalued and undervalued stocks, guiding the strategic selection of companies for potential investments. In addition to fundamental analysis, the research integrates technical analysis to pinpoint opportune entry and exit points for profitable trades. Employing a multi-dimensional perspective, encompassing long-term, mid-term, and short-term horizons, the study utilizes candlestick patterns to discern crucial market trends and significant turning points. The synthesis of these comprehensive analyses offers a robust framework for making informed investment decisions in the FMCG sector. The findings of this study demonstrate the efficacy of both fundamental and technical analysis in identifying profitable investment opportunities in the FMCG sector. Nevertheless, the selection of the most suitable approach should be tailored to the individual risk tolerance and investment objectives of discerning investors.

**Keywords:** *FMCG, Fundamental analysis, Technical analysis, Investment opportunities*

## **INTRODUCTION**

The Fast-Moving Consumer Goods (FMCG) sector in India stands as a pivotal catalyst in propelling the nation's economic growth, driven by its distinguishing characteristics of rapid product turnover and affordability, serving extensively to individual consumers. Demonstrating remarkable dynamism, the sector consistently achieves robust annual growth rates surpassing 10%, paving the way for FMCG companies to embark on further expansion endeavours. In 2022, the FMCG sector emerged as the fourth-largest sector in the Indian economy, with a market size of US\$ 307.2 trillion. Projections indicate a compound annual growth rate (CAGR) of 9.5% during 2023-2028, with the sector expected to reach US\$ 547.3 trillion by 2028.

This upward trajectory in the FMCG sector is attributed to various factors, including the rising affluence of Indian consumers, increasing urbanization, growing demand for packaged and convenient food products, and the adoption of modern retail channels. Segmented into three distinct categories, namely household and personal care, healthcare, and food and beverages, the FMCG sector in India is predominantly led by the household and personal care segment, succeeded by healthcare and food and beverages. Urban areas dominate the landscape, accounting for 55% of the overall sector's revenue, buoyed by the increasing purchasing power

*\* Student, M.M.S Durgadevi Saraf Institute of Management Studies, Mumbai.*

*\*\* Assistant Professor, Durgadevi Saraf Institute of Management Studies, Mumbai.*

of the middle-income group, thus propelling the FMCG market's growth trajectory. The sector's progress is further bolstered by favourable government policies, such as the relaxation of licensing regulations and significant approvals for Foreign Direct Investment (FDI), with 51% allowed in multi-brand and 100% in single-brand retail. However, rural demand still holds untapped potential, which can be harnessed through awareness programs designed to spur growth in these regions.

Employing approximately 3 million individuals, constituting around 5% of the nation's total factory workforce, the FMCG sector offers substantial employment opportunities, making it an attractive prospect for new entrants. Projections for the FMCG market remain promising, with anticipated growth rates of 10-11% in 2023, wherein the urban and rural segments are projected to grow by 8% and 6%, respectively. Key drivers for this growth encompass increasing incomes, ongoing urbanization, and evolving lifestyles, collectively ensuring a bright and optimistic future for India's FMCG sector.

This research aims to contribute to the FMCG sector in several ways. First, it selects the top ten large-cap companies with a market capitalization of more than ₹ 8000 Cr. Second, it creates an index to monitor the sector's performance and individual companies. Third, it categorizes stocks as undervalued or overvalued based on their P/E ratio compared to the sector's average P/E ratio. Fourth, it selects value-picks and growth-picks from undervalued and overvalued stocks, respectively, using top-line (revenue), bottom-line (earnings), and PEG ratio analysis. Finally, it calculates the Net Asset Value (NAV) to evaluate the sector fund's performance compared to the benchmark index.

The study also incorporates technical analysis to identify entry and exit points for profitable trades in the FMCG sector. It performs long-term, mid-term, and short-term technical analyses on the selected stocks, using candlestick patterns to determine potential buying and selling opportunities. The analysis offers valuable insights into price movements and signals significant turning points in the market.

By combining fundamental and technical analysis, this research provides a comprehensive understanding of the FMCG sector and aids in making informed investment decisions.

## **REVIEW OF LITERATURE**

The research paper emphasizes that the combination of fundamental and technical analysis is essential for evaluating the FMCG sector and making well-informed investment decisions. Through fundamental analysis, investors can assess financial performance and intrinsic value, while technical analysis provides insights into market behaviour and future trends based on historical price movements. This balanced approach helps investors identify growth and value opportunities and construct a well-balanced investment portfolio in the FMCG sector.

Sri Ayan Chakraborty (2017), conducted a study to know the financial performance of leading FMCG companies in India and the study was based on six leading companies in FMCG sector, as per the study financial ratio analysis plays a significant role in evaluating the performance of a Company.

Pooja Sharma & Abhay Grover (2016), conducted a study on financial performance of FMCG companies using different ratio and found that ITC is was the most profitable company among the selected sample of companies. The study was based on top five companies.

Bagchi, B. and Khamrui, B. (2012), conducted a study which focused on comparative analysis of two companies and the study was also conducted based on accounting ratios. Therefore, accounting ratios are an important tool to analyse the financial performance of companies.

Shivanisinh Shailesh Kumar Parmar (2017), conducted a study to know the financial efficiency of select FMCG companies using accounting ratios.

Alpa Joshi (2013) conducted a study to know the profitability performance of FMCG companies and used accounting ratios like net operating profit ratio, profit after tax ratio, net profit margin to analyse the financial performance of these companies. All these studies have used accounting ratios for analysing financial performance of FMCG companies. Be it for liquidity, profitability or efficiency accounting ratios provide an easy way of understanding the performance of a business.

## **FUNDAMENTAL ANALYSIS AND TECHNICAL ANALYSIS**

Fundamental analysis, in the context of the FMCG sector, involves evaluating a security by thoroughly examining its underlying fundamentals, including financial performance, future earnings potential, and the overall industry outlook. It encompasses both financial and non-financial aspects, such as assessing the economy, industry scenario, company management, and financial position. This form of analysis scrutinizes a company's primary ratios to assess its financial well-being and potential valuation. By employing fundamental analysis, one gains valuable insights to make informed investment decisions, considering factors such as revenue, asset management, business production, and interest rates.

On the other hand, technical analysis is a method of forecasting future price movements in the financial markets. It relies on the belief that past price movements can predict future ones. Technical analysts utilize various tools and indicators, such as charts, moving averages, oscillators, and volume, to analyse price data. The fundamental tenets of technical analysis are centred around the principles that price movements are driven by supply and demand, leading to trends that repeat themselves. This approach allows investors to predict potential price movements based on historical market psychology.

While fundamental analysis adopts a top-down approach, examining the economy, company, and sector, technical analysis focuses on historical price data to anticipate future trends.

## **OBJECTIVES OF THE STUDY**

- To conduct a comprehensive analysis of the top 10 FMCG companies based on the parameters of profitability, valuation, and growth prospects.
- To identify the value-pick and growth-pick stocks among the top 10 FMCG companies using fundamental and technical analysis.



- To identify and test technical indicators that can be used to develop a trading strategy with a high probability of success.
- To identify the best performing companies among the selected companies.

## RESEARCH METHODOLOGY

### Research Design

The research methodology employed in this study is descriptive, encompassing both fundamental and technical analyses of FMCG companies. The study utilizes a combination of quantitative and qualitative data, collected from secondary sources like websites, company balance sheets, and annual reports. For technical analysis, charts and live trading with oscillators and intraday strategies were utilized. Additionally, ratio analysis was employed to gauge the profitability, efficiency, sustainability, and creditworthiness of the businesses. The data was sourced from day-to-day trading activities related to FMCG companies.

### Size of sample: Top 10 Large Caps. Companies

- |                                      |                                |
|--------------------------------------|--------------------------------|
| 1. Hindustan Unilever Limited.       | 6. Dabur India Limited.        |
| 2. Imperial Tobacco Company.         | 7. Marico Limited.             |
| 3. Nestle India Limited.             | 8. Adani Wilmar.               |
| 4. Britannia Industries Limited.     | 9. P & G Healthcare.           |
| 5. Godrej Consumer Products Limited. | 10. Colgate Palmolive Limited. |

## FINDINGS OF THE STUDY

In this study, we evaluated the P/E ratios of 10 companies and compared them to the sector's average P/E ratio of 61.50. Companies with P/E ratios higher than the sector's average, namely Nestle India Ltd., Godrej consumer products Ltd., Adani Wilmar Ltd., and P & G Hygiene and Healthcare Ltd., were classified as overvalued, while companies with lower P/E ratios, such as Hindustan Unilever Ltd., I.T.C Ltd., Britannia Industries Ltd., Dabur India Ltd., Marico Ltd., and Colgate Palmolive Ltd., were deemed undervalued.

Sr. No.	Company Name	P/E Ratio	Category
1	Hindustan Unilever Ltd.	60.3	Under-Valued
2	ITC Ltd.	28.64	Under-Valued
3	Nestle India Ltd.	86.61	Over-Valued
4	Britannia Industries Ltd.	47.34	Under-Valued
5	Godrej Consumer Products Ltd.	61.84	Over-Valued
6	Dabur India Ltd.	55.03	Under-Valued
7	Marico Ltd.	52.42	Under-Valued
8	Adani Wilmar Ltd.	106.13	Over-Valued
9	P&G Hygiene and Healthcare Ltd.	75.67	Over-Valued
10	Colgate Palmolive Ltd.	41.07	Under-Valued
<b>Average of P/E Ratio</b>		<b>61.5</b>	

Source: [www.moneycontrol.com](http://www.moneycontrol.com)

The undervalued stocks were meticulously chosen for further evaluation through a thorough analysis of their revenue and profit metrics, leading to the selection of Hindustan Unilever Ltd., I.T.C Ltd., Britannia Industries Ltd., Dabur India Ltd., Marico Ltd., and Colgate Palmolive Ltd. for further consideration.

Sr. No.	Revenue	Profit	Outcome
1	Increased	Increased	} SELECTED
2	Increased	Decreased	
3	Decreased	Increased	
4	Decreased	Decreased	REJECTED

SN	Under – Valued Companies	Comparison of Revenue	Comparison of Profit
		of 2022-2023	of 2022-2023
1	Hindustan Unilever Ltd.	Increased	Increased
2	I.T.C Ltd.	Increased	Increased
3	Britannia Industries Ltd.	Increased	Increased
4	Dabur India Ltd.	Increased	Decreased
5	Marico Ltd.	Decreased	Increased
6	Colgate Palmolive Ltd.	Increased	Increased

The PEG ratio analysis was performed for the overvalued companies, and none of them satisfied the criteria of having a PEG ratio between 0-1.5 thereby, making them ineligible for further analysis.

Sr. No.	Over- Valued Companies	PEG Ratio
1	Nestle India Ltd.	4.2
2	Godrej Consumer Products Ltd.	-13.9
3	Adani Wilmar Ltd.	-3.6
4	P & G Hygiene & Healthcare Ltd.	-35.1

*Source: www.moneycontrol.com*

In this study, the selected companies were ranked based on five crucial ratios, namely current ratio, quick ratio, inventory turnover ratio, return on asset ratio, and return to net worth ratio, which are considered significant for assessing the FMCG sector.

SN	Company Name	Current Ratio	Quick Ratio	Inventory Turnover Ratio	Return on Asset Ratio	Return on Net Worth Ratio
1	Hindustan Unilever Ltd.	1.38	1.03	4.86	13.86	19.83
2	I.T.C Ltd.	2.84	1.98	1.92	22.35	27.74
3	Britannia Industries Ltd.	1.15	0.87	6.09	24.76	67.24
4	Dabur India Ltd.	0.85	0.38	2.83	14.68	21.84
5	Marico Ltd.	2.18	1.12	3.85	23.16	32.06
6	Colgate Palmolive Ltd.	1.43	1.5	4.31	36.32	61

*Source: www.valueresearchonline.com*

Colgate Palmolive (India) Ltd., Marico Ltd., Britannia Industries Ltd., I.T.C Ltd., Hindustan Unilever Ltd., and Dabur India Ltd. were sequentially ranked from first to sixth, respectively, as a result of this comprehensive evaluation.

Company Name	Current Ratio	Quick Ratio	Inventory Turnover Ratio	Return on Asset Ratio	Return on Net Worth Ratio	Sum of Rank	Ranking of sum	} Lowest Sum is Ranked First
Hindustan Unilever Ltd.	4	4	2	6	6	22	5	
I.T.C Ltd.	1	1	6	4	4	16	4	
Britannia Industries Ltd.	5	5	1	2	1	14	2	
Dabur India Ltd.	6	6	5	5	5	27	6	
Marico Ltd.	2	3	4	3	3	15	3	
Colgate Palmolive Ltd.	3	2	3	1	2	11	1	

An investment fund of 10 crores was allocated among the selected stocks based on their rankings. Colgate Palmolive (India) Ltd. was allotted the highest asset of 3 crores, followed by Marico Ltd. with 2.5 crores, Britannia Industries Ltd. with 2 crores, I.T.C Ltd. with 1.5 crores, Hindustan Unilever Ltd. with 80 lakhs, and Dabur India Ltd. with 20 lakhs.

Rank	Company Name	Price [02-05-2023]	No. of Share	Asset Allocation
1 <sup>st</sup>	Colgate Palmolive (India) Ltd.	1609.55	18639	3.0 Cr. [30%]
2 <sup>nd</sup>	Marico Ltd.	549.2	45521	2.5 Cr. [25%]
3 <sup>rd</sup>	Britannia Industries Ltd.	4654.15	4297	2.0 Cr. [20%]
4 <sup>th</sup>	ITC Ltd.	443.4	338230	1.5 Cr. [15%]
5 <sup>th</sup>	Hindustan Unilever Ltd.	2711.05	2951	80 L. [8%]
6 <sup>th</sup>	Dabur India Ltd.	557.2	3590	20 L. [2%]
			<b>TOTAL</b>	<b>10 Cr. [ 100%]</b>

In this study, the fundamental analysis revealed Colgate Palmolive (India) Ltd. as the foremost investment choice, receiving a 3-crore asset allocation due to its strong fundamentals. Conversely, Dabur India Ltd. exhibited comparatively weaker fundamentals, resulting in a modest 20-lakh allocation as an investment option.

In this study, the evaluation of technical indicators led to the recommendation that investors should avoid using the Central Pivot Range indicator due to its lower probability of success. Instead, the Aroon indicator, the Stochastic - RSI indicator, and the Bollinger Band indicator exhibited higher probabilities of success. The backtesting results particularly highlighted the

Aroon indicator as the most reliable for Hindustan Unilever Limited, offering a notably higher probability of success at 42.64%. Additionally, the stochastic RSI showed a respectable probability of success at 42.27%, while the Bollinger Bands demonstrated a probability of success at 42.10%. Consequently, it stands out as a favourable choice for investors seeking higher success rates in their trading decisions.

Sr. No.	Name of Indicator	Total Win Probability	Total Loose Probability	Rank
1	Aroon Indicator.	42.64%	57.36%	1 <sup>st</sup>
2	Stochastic - RSI Indicator.	42.27%	57.73%	2 <sup>nd</sup>
3	Bolinger Bands Indicator.	42.10%	57.90%	3 <sup>rd</sup>
4	Central Pivot Range Indicator.	38.10%	61.90%	4 <sup>th</sup>

*Source: www.streak.tech*

## CONCLUSION

Overvalued stocks such as Nestle India Ltd., Godrej consumer products Ltd., Adani Wilmar Ltd., P&G Hygiene and Healthcare Ltd. are not good investment opportunities due to their high P/E ratios.

Undervalued stocks such as Hindustan Unilever Ltd., I.T.C Ltd., Britannia Industries Ltd., Dabur India Ltd., Marico Ltd., Colgate Palmolive Ltd. are more attractive investment opportunities due to their lower P/E ratios and growth potential.

Use the following financial ratios to assess FMCG companies: current ratio, quick ratio, inventory turnover ratio, return on asset ratio, return to net worth ratio.

Rank the FMCG companies based on the financial ratios and allocate investment funds accordingly.

Colgate Palmolive (India) Ltd. is the best investment choice, while Dabur India Ltd. is a less attractive investment opportunity.

Use the Aroon, Stochastic - RSI, and Bollinger Band indicators for trading decisions. Avoid the Central Pivot Range indicator.

The Aroon indicator is the most reliable technical indicator.

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# **To study the relationship between tyre service providers and puncture mechanics for setting kiosk in petrol pumps across Mumbai region**

**Mukesh Gupta\***

**Chandrashekhar Kaushik\*\***

## **ABSTRACT**

This research paper provides opportunities for startup platform companies (tyre service providers) as a business model that creates value for puncture mechanics and petrol pumps.

The objective was to identify the role of platform companies in setting up a tyre service kiosk, another objective was to study the willingness of puncture mechanics that will work at designated petrol pumps and also to identify the preference of branded equipment used by puncture mechanics.

The study was conducted in different parts of Mumbai city. Initially secondary data was focused on tyre service providers and potential partners for setting up a kiosk inside a petrol pump. This was followed by quantitative research, in order to make the study effective primary data was collected using a structured questionnaire. Primary data was collected from 150 respondents who were puncture mechanics throughout Mumbai region.

During this research it was found that puncture mechanics had a preference for certain brands of tyres, they also preferred certain equipment's which was necessary for their day-to-day work. Puncture mechanics were doing business for certain duration of the day.

This research states that willingness of puncture mechanics to work in petrol pumps kiosk is independent on location provided by tyre service providers. It also states that type of equipment handled by puncture mechanics is independent of brands used by them.

**Keywords:** *Tyre service providers, puncture mechanics, petrol pumps, kiosk, potential partners.*

## **INTRODUCTION**

In the rapidly evolving landscape of modern transportation, efficient puncture mechanics have become indispensable. With the proliferation of automobiles on the roads, addressing tyre related mishaps has gained paramount significance. In the context, the emergence of innovative solutions, such as self-service kiosk and on demand tyre service providers, has revolutionized the traditional approach to puncture repair.

(Kotler, 1996) said that *“In order to serve more effectively in the competitive market, the solution to price competition has been developed a differentiated offer and delivery which includes innovative features that set the platforms companies apart from the competition with higher brand image”*.

*\* Student, PGDM, Durgadevi Saraf Global Business School, Mumbai*

*\*\* Associate Professor (Marketing), Durgadevi Saraf Institute of Management Studies. Mumbai*

In previous days the motorist had to navigate through the frustration of changing a flat tyre themselves or relying on petrol pumps for assistance. The evolving landscape of automotive industry has fostered collaborations between puncture mechanics and platform companies (tyre service provider). These companies bridge the gap between drivers in need of puncture repair services and skilled puncture mechanics. Over the last few decades, designated petrol pumps have observed a major change due to technological advancement, change in customer habit, expectation etc. Accordingly, customer service has also undergone a major change. While empathy and active listening plays an important role in enhancing customer service (HCM Sales, 2017).

Tyre service providers take many factor for setting up a kiosk inside a petrol pumps from Indian oil Cooperation limited (IOCL), Bharat petroleum Cooperation limited (BPCL), and Hindustan petroleum Cooperation limited, which helpful for puncture mechanics to identify designated petrol pumps. The Factor include such as space availability, Kiosk size, Availability of equipment are taken into consideration. Petrol pumps also undergoes adoption of technology in a massive way, apart from basic requirement for fuel purchase, usage of technology, payment solutions and facilities, and availability of integrated convenience at petrol pumps (Sari, 2017). Therefore there is a need of tyre service providers to open a kiosk inside a petrol pumps.

In petrol pumps associated services like air pressure checking, vehicle cleaning, and convenience stores, are the prime need for consumer and platform companies should focused on it to retain customers. (Devi, 2016). Along with the good quality and quantity of fuel in petrol pumps other primary facility also play an important role like air pressure checking, wind shield cleaning, mechanic facility and availability of refreshment are the important needs for consumers in petrol pumps (Mary, 2018). Air pressure plays an important role to retain customers (Priyadharshini, 2019).

In this paper, an effort is made to identify the role of platform companies in setting up a tyre service kiosk. The other purpose was to identify the willingness of puncture mechanics to work at designated petrol pumps and also to identify the preference of branded equipment used by puncture mechanics.

## **LITERATURE REVIEW**

A Fuel station (Petrol pumps) is a place where they sell fuel and engine lubricants for motor vehicles. However, over a last few year, and due to competitive market, Fuel retail companies like Indian oil cooperation limited, Bharat petroleum cooperation limited and Hindustan petroleum cooperation limited had started providing various value added services like free air for vehicle tyres, Car Wash, Kiosk for vehicle repair, convenience stores, clean toilet, kids zone etc. Customer buying behaviour has also evolved with the concept of availing value-added services leading to service-based industry. Petrol pumps in India have expected major shift from “only petrol pumps” having fuel products for sale to “Recreation centre” with the concept of value-added services under one umbrella (Bigelow, 2019).

Due to increasing emphasis on customer has also led to a greater understanding of the sales and retention. A cross- industry comparison of customer satisfaction study in USA AND UK showed that in today scenario, customer service quality has been demonstrated as key to customer retention (Gilbert, 2006). Consumer satisfaction is derived from the customers comparison of the customers actual experience with a service episode, contrasted with the customers service expectation.

Service quality varies within industries, and because of this organizations competing in similar markets are compelled to monitor both the practices of their competitors and their own behaviour to attract and retain their customers (Moran, 2008). There has been linear to nonlinear relationship within shopping journey with respect to their brands and risk associated with customer shopping journey (Farah, 2019).

Globally, Petrol pumps has undergone a huge change. Some factors play a historically important role (E.g., price, quality, etc) while some factors have emerged because of increasing competition and technological advancement like kiosk inside petrol pumps. There are many factors that has emerged as customer choices and preferences. It has been observed that in the process of buying fuel from petrol pumps other things are also taken into considerations like quality of fuel, price, availability of tyre repair, Kiosk before selecting a petrol pump (Petra, 2017). Geographical coverage of petrol pumps and consumer perception of customer confidence plays an important role on customer buying decision (Marc, 2012).

Organized retail kiosk in India is growing very fast and consumer buying behavioural dimensions are undergoing rapid changes (Katole, 2012).Customers needs and trends vary from region to region , therefore non fuel kiosk proposition has to be specially targeted each retail kiosk and customized according to demographics of the regions (Patel, 2012).Nowadays due to implementation of advanced technology smart- kiosk has great potential to grow in future (Das, 2019).

Factors such as customer stratification, brand trust and brand image towards customer loyalty in India recommended that fulfilling customer expectation's is the main priority to retain and enhance the customer loyalty (Azizan, 2019).Introduction of self-service pumps and self-service kiosk reduced the traffic of people in petrol pumps and attendants at fuel stations , shifting the work done by these attendants to the customer.

This had helped differentiate the customer buying experience and attain upward productivity growth (Emek, 2017). Fore court efficiency in the fuel station is also very important from the perspective of customer perception and satisfaction. Poor staffing, inefficient fuel pumps, queuing at fuel stations are common factors leading to inefficient service delivery at fuel stations (Ajayi, 2017).

Nowadays important trends of customer loyalty have been introduced. Customers has observed that fuel supply company are offering customer loyalty programs to build customer loyalty and increase repeat purchase (Madel, 2020).In today's world if company is providing an innovative customer experience for brand differentiations are more successful and retaining the customer on a greater extent (Pham, 2019).



In modern retail they provide a large variety to customers and offer an ideal shopping experience with an amalgamation of product, entertainment and service , all under a single roof (Sahney, 2016).Due to emerging trends for preference of organized retail , small retail had to initiate strategies for survival (Rai, 2014).Nowadays customer demands for non-fuel facility at petrol pumps has been increasing as a part of customer convenience. The concept of petro-retailing in India has witnessed competition among the petroleum cooperations due to linearization in policy by government of India that allows private petroleum cooperation to establish their fuel stations .

It has been observed that augmented factors would help to increase non-fuel revenue but such a model has yet to be successful in India because margins in selling petrol and diesel are significantly lower compare to margins in retails and supermarket kind of structures (Report, 2017).Today in petrol pumps many services are provided other than fuel like Automated Teller Machine(ATM), Food Lodge, Free air service etc (Keerthika, 2019).In Petrol pumps, associated services like air pressure checking, vehicle cleaning and availability of refreshment are important needs for consumers in petrol pumps (Mary, 2018), (Devi, 2016).Air pressure plays an important role to retain customers(Priyadharshini, 2019).

Based on the literature that profoundly relied upon Facility available inside petrol pumps, the study helps to understand the relationship between puncture mechanics and tyre service providers for setting a kiosk inside a petrol pumps, also to identify branded equipment required by tyre service providers.

## **OBJECTIVES OF THE STUDY**

- To identify the role of platform companies in setting up a tyre service kiosk.
- To study the willingness of puncture mechanics to work at designated petrol pumps.
- To identify the preferences of branded equipment used by puncture mechanics.

### **Hypothesis:**

H1o: Willingness of puncture mechanics to work in petrol pump kiosk is independent on location provided by tyre service providers.

H11: Willingness of puncture mechanics to work in petrol pump kiosk is dependent on location provided by tyre service providers.

H2o: Type of equipment handled by puncture mechanics is independent on brands used by them.

H21: Type of equipment handled by puncture mechanics is dependent on brands used by them.

## **RESEARCH METHODOLOGY**

In these research study, the primary focus was on puncture mechanics employed in puncture repair shops, who served as essential sampling unit. The sampling frame was defined to encompass puncture mechanics exclusively within the vibrant city of Mumbai, ensuring that the research outcomes were representative of the specific geographic region. To gather data effectively, a carefully structured questionnaire was employed as the primary research tool. This questionnaire was administrated to a sample size of 150 respondents, thoughtfully stratified to include 60 participants from western region, 40 from the central region, 30 from harbour region and 20 from other area within Mumbai. These strategic subdivisions aimed to capture a holistic view of the experience and challenges faced by puncture mechanics across different parts of city.

The research adopted an inferential statistical approach to derive meaningful insights from the collected data and relied on Statistical Package for the Social Sciences (SPSS) for data analysis. This research was distinctly quantitative in nature, emphasizing numerical data and statistical analysis.

Furthermore, the study integrated secondary data sources, including comprehensive literature reviews, to enrich the research findings and provide a well-rounded understanding of subject matter. This comprehensive approach aimed to shed light on the diverse experiences and unique perspectives of puncture mechanics within the Mumbai region.

## **LIMITATIONS**

The survey was conducted within Mumbai region only. The time span of the research was a period of two months (time constraint). This research is also subject to cost constraints.

## **DATA ANALYSIS**

### **Hypothesis 1:**

H1o: Willingness of puncture mechanics to work in petrol pump kiosk is independent on location provided by tyre service providers.

H11: Willingness of puncture mechanics to work in petrol pump kiosk is dependent on location provided by tyre service providers.

**Table 1:** Crosstabulation for Location Provided by tyre service provider and willingness to open a kiosk by respondent inside a petrol pump

Location Provided by tyre service providers (Mechmiles) * willingness of potential partners (Puncture mechanics) to work in petrol pump kiosk.					
Crosstabulation					
			willingness of potential partners (Puncture mechanics) to work in petrol pump kiosk		Total
			Yes	No	
Location selection by tyre service providers (Mechmiles)	Easily Accessible	Count	33	13	46
		Expected Count	29.8	16.2	46.0
		% of Total	23.2%	9.2%	32.4%
	Accessible	Count	23	16	39
		Expected Count	25.3	13.7	39.0
		% of Total	16.2%	11.3%	27.5%
	More Vehicular Traffic	Count	28	15	43
		Expected Count	27.9	15.1	43.0
		% of Total	19.7%	10.6%	30.3%
	Others	Count	8	6	14
		Expected Count	9.1	4.9	14.0
		% of Total	5.6%	4.2%	9.9%
Total		Count	92	50	142
		Expected Count	92.0	50.0	142.0
		% of Total	64.8%	35.2%	100.0%

*Source: Researchers' Primary Data*

Table 1 shows that out of total respondents 23% of puncture mechanics opted for locations which are easily accessible, 16% for accessible, 20% for more vehicular traffic and 6% as others.

**Table 2:** Chi-square test for willingness to open a kiosk and location Provided by respondents

<b>Chi-Square Tests</b>			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.913 <sup>a</sup>	3	.591
Likelihood Ratio	1.925	3	.588
Linear-by-Linear Association	.836	1	.360
N of Valid Cases	142		

*Source: Researchers' Primary Data*

Table 2 suggests, the p value as 0.591. Since the p value is  $0.591 > 0.05$ . Therefore we fail to reject the null hypothesis. Therefore, Willingness of puncture mechanics to work in petrol pump kiosk is independent on location provided by tyre service providers.

### Hypothesis 2:

H2o: Type of equipment handled by puncture mechanics is independent of brands used by them.

H21: Type of equipment handled by puncture mechanics is dependent of brands used by them.

**Table 3:** Crosstabulation for Brand preference and type of equipment required

Brand preferences by potential partners (Puncture mechanics) * Type of equipment used by puncture mechanics							
Crosstabulation							
			Type of equipment necessary for service given by puncture mechanics				Total
			Tyre Brands	Toolbox	Air Gun	Other	
Brand preferences by potential partners (Puncture mechanics)	MRF	Count	6	9	5	1	21
		Expected Count	7.2	8.3	4.1	1.3	21.0
		% of Total	4.2%	6.3%	3.5%	0.7%	14.8%
	CEAT	Count	23	25	12	4	64
		Expected Count	22.1	25.2	12.6	4.1	64.0
		% of Total	16.2%	17.6%	8.5%	2.8%	45.1%
	Apollo	Count	17	16	9	4	46
		Expected Count	15.9	18.1	9.1	2.9	46.0
		% of Total	12.0%	11.3%	6.3%	2.8%	32.4%
	Other	Count	3	6	2	0	11
		Expected Count	3.8	4.3	2.2	.7	11.0
		% of Total	2.1%	4.2%	1.4%	0.0%	7.7%
Total		Count	49	56	28	9	142
		Expected Count	49.0	56.0	28.0	9.0	142.0
		% of Total	34.5%	39.4%	19.7%	6.3%	100.0%

*Source: Researchers' Primary Data*

Table 3 shows that out of total respondents 39% prefer toolbox, 34% tyre brands, 20% air gun and 6% as others. It also states that Puncture mechanics prefer 4% as MRF, 16% CEAT, 12% as Apollo and 2% as other branded tyres.

**Table 4:** Chi-square test for Type of equipment and brand used by them

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.859 <sup>a</sup>	9	.970
Likelihood Ratio	3.476	9	.942
Linear-by-Linear Association	.053	1	.818
N of Valid Cases	142		

*Source: Researchers' Primary Data*

Table 4 suggests, the p value as 0.970. Since, the p value is  $0.970 > 0.05$ . Therefore we fail to reject the null hypothesis. Therefore, Type of equipment handled by puncture mechanics is independent of brands used by them.

## CONCLUSION

- Willingness of puncture mechanics to work in petrol pumps kiosk is independent on location provided by tyre service providers, Type of equipment handled by puncture mechanics is independent of brands used by them.
- Thus, selection of location by puncture mechanics to open a kiosk inside a petrol pump does not have any relevant link with willingness to work inside a kiosk.
- The type of equipment required by puncture mechanics to work in kiosk does not have any relevant link with brands of tyres which are available for them.

## SUGGESTIONS

- There is no relationship between type of equipment required by puncture mechanics and brand associated to them, so company should focus on equipment's that contain some kind of quality with it, which help tyre service provider to earn more margin and profit.
- Company should focus on providing location to puncture mechanics in such a way that they can open a kiosk inside a petrol pump with their choice of convenience, because there is no relationship between location and willingness to open a kiosk inside a petrol pumps.
- Company should focus on creating a lead in terms of new petrol pumps and maintaining inventory of equipment required by puncture mechanics.

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# **Exploring the Role of CSR on Organizational Commitment and Job Satisfaction: A Study of Banking Sector**

**Sarika Jain\***

## **ABSTRACT**

During the past few decades stakeholders' expectation for businesses and organizations to behave ethically and to act responsible towards their society has grown vastly. Corporate Social responsibility (CSR) is an important concept that can help companies to create long-term value for all stakeholders. Thus, this research focuses on banking employees in India, with the purpose of identifying the relationship between employee CSR attitudes and positive workplace outcomes like organizational commitment (OC) and job satisfaction (JS). Standard questionnaires were used to collect data from 150 professionals working in banking sector in India. The CSR scale was validated using exploratory factor analysis (EFA). The data was analysed using the SPSS Version 26. Reliability analysis, correlation and regression analysis were conducted to attain the objectives of the study. The study confirmed the impact of CSR on organizational commitment and job satisfaction.

**Keywords:** *CSR, Organizational Commitment, Job Satisfaction, Banking, India*

## **INTRODUCTION**

In the last two decades, corporate social responsibility (CSR) has emerged as a strategic imperative for an organization's sustainability (González-Masip et al., 2019; Gangi et al., 2019; Chen, & Hung-Baesecke, 2014). It reflects the company's responsibility toward primary social stakeholders, secondary social stakeholders, primary non-social stakeholders, and secondary non-social stakeholders (Turker, 2009; Chaurasia et al., 2020; Pfeffer, 2010).

Customers, investors, and employees increasingly expect businesses, including banks, to be socially and environmentally responsible (Chowdary, Das, & Sahoo, 2011). Meeting these expectations is crucial for maintaining a positive reputation and attracting and retaining stakeholders (Mai et al. 2021). This endorses that financial institutes including banks are critical in the sustainable development of the India (Chowdary, Das, & Sahoo, 2011). India is the first country in the world to recognize CSR through company law for specified companies (Palai & Subudhi, 2021). According to Burianová and Paulík (2014), the act of executing CSR and moral standards in the banking industry prompts for social duty and ethics which has become an appropriate marketing apparatus to communicate with the stakeholders.

CSR practices can help banks identify and mitigate risks related to environmental, social, and governance (ESG) factors. By taking proactive measures to address these risks, banks can reduce potential liabilities and reputational damage (Mai et al. 2021). CSR activities demonstrate a bank's commitment to ethical practices and its concern for the welfare of stakeholders, including customers, employees, and communities. This fosters trust and strong relationships with stakeholders, leading to long-term support and engagement. Many countries have integrated CSR principles into their legal and regulatory frameworks. Adhering to CSR

*\* Professor, Durgadevi Saraf Institute of Management Studies, Mumbai*



standards and reporting requirements helps banks ensure compliance with relevant regulations (Chowdary, Das, & Sahoo, 2011).

Most studies on CSR effects have mainly focused on external stakeholders such as consumers and organizations in general, while CSR effects on internal stakeholders such as employees have been relatively neglected (Collier & Esteban, 2007; Yasin, 2021). In fact only 4% of the research papers (from a sample of 17 CSR reviews) examine perceptions of CSR at the individual level of analysis (Aguinis and Glavas, 2012). Employees are one of the most pivotal stakeholders of an organization because they can influence and can be influenced by their organizational activities, thus playing an essential role on organizational effectiveness (Azim, 2016). Since employees play important roles in an organization as a stakeholder group, studies have recently tried to identify the impact of CSR on employees (Zhu et al., 2012; Del Giudice et al., 2019; Shen & Zhang, 2019). However such studies are fewer in number.

Most of the studies assessing the role of CSR on employee attitudes have been done in developed countries (Peterson, 2004, Dabic et al., 2016) with a few exceptions where such context is a developing economy like Bangladesh (Rahman, Haski-Leventhal, & Pournader, 2016), Iran (Nejati & Ghasemi, 2013) or Turkey (Turker, 2009b). Our study investigated the consequences of CSR directed on employees working in an emerging economy like India with a culture characterized by high power distance. By explicitly concentrating on stakeholder theory and investigating the CSR activities of the banking firms, our study explores organizational commitment and job satisfaction as a consequence of individual perception of organizational CSR.

## **OBJECTIVES OF THE STUDY**

This research is being carried out on employee working in financial sector in India. The survey is being conducted with a sample size of 150 participants. Following are the key objectives of the present research:

- To study the impact of CSR on Job satisfaction.
- To assess the impact of CSR on Organizational Commitment.

## **REVIEW OF LITERATURE**

### **Corporate Social Responsibility**

The term "corporate social responsibility" (CSR) refers to a company's obligation to conduct its business in a morally and environmentally responsible way. The concept has long evolved from being merely a "nice but optional" activity to virtually mandatory for many companies, and as such, these companies nowadays exercise increased willingness to act responsible towards key social, ethical, and environmental issues (Sanusi & Johl, 2020).

Reputation, brand image, ethical consideration, economic considerations, increased shareholder value, improved relationship with suppliers and government, and risk management are amongst many reasons for companies actively integrating CSR with their business plan (KPMG, 2011).

In light with such gained popularity of CSR, many studies have explored the effects of CSR on various aspect of organizations such as public relations and advertising, competitive contexts (Chaurasia et al., 2020), relationships with external and internal stakeholders (Snider, Hill and Martin, 2003), and financial performance (Brammer and Millington, 2008; Chaurasia et al., 2020).

### **Job Satisfaction**

Job satisfaction is a critical aspect of the work experience that influences employees' attitudes, motivation, and overall well-being within an organization (Locke, 1976). Robbins (1998) defines job satisfaction as “the sum of an employee’s positive feelings about his or her employment and workplace.” It also includes the pleasure that workers get from their jobs and working lives (Bateman & Organ, 1983).

Research on job satisfaction has been extensive and covers various areas, including its determinants, consequences, and measurement methods. It encompasses various aspects such as work environment, job role, recognition, compensation, opportunities for growth (Sani et al., 2018) and the alignment of personal values with the organization's mission (Burns, 2007).

### **Organizational Commitment**

Organizational commitment (OC) is the psychological attachment and identification that employees have towards their organization (Mowday, et al., 1979, Aguinis et al., 2013). Mowday et al. (1979) discussed OC across two trends, namely commitment-related behaviours and attitudinal commitment. According to the authors, the former is concerned with the employees’ behaviours that exceed normal expectations of commitment to the organization. The latter represents a scenario whereby identify and goals of an individual becomes strongly integrated with identify and goals of the organization.

Sheldon (1971) defined commitment to organization as: “an attitude or an orientation toward the organization which links or attaches the identity of the person to the organization.” A high level of organizational commitment leads to employees actively supporting the organization's goals, being loyal, and going the extra mile in their work. The added value of such employees is that they tend to be more determined in their work, show relatively high productivity and are more proactive in offering their support (Greenberg & Baron, 2008; Gond, et al., 2013).

### **CSR and Job Satisfaction**

Social exchange theory (SET) governs the exchanges between employees in organizations including obligations that are unspecified and implicit (Blau, 1964; Wu & Lee, 2017). Many researchers suggests that employees react positively to what they perceive as beneficial treatment and conversely they will behave negatively toward detrimental handling by the management according to the norms of reciprocity (Blau, 1964). CSR initiatives can positively impact the work environment and employees' day-to-day experiences. For instance, sustainability efforts may lead to a healthier and more environmentally conscious workplace.

Philanthropic activities can create a sense of purpose and pride among employees. Such improvements in the work environment can contribute to increased job satisfaction. Accordingly, we propose that when employees perceive a fair treatment by their organizations they will behave positively in return (Bhatti et al., 2020) and thus satisfaction of employees will increase with higher perceived CSR.

The studies that investigate the relationship between JS and different aspects of CSR (Vitell and Davis, 1990; Mozes et al., 2011; Zhu et al., 2014) more or less confirm the positive relationship between CSR practices and employee JS, primarily in developed countries. We are proposing the similar relationship in banking sector in Indian context.

Hence we can hypothesize that:

*H1: There is a positive relationship between employee CSR attitudes and job satisfaction.*

### **CSR and Organizational Commitment**

According to the stakeholder theory employees are a key stakeholder group to consider when evaluating a company's social responsibility (Maignan et al., 1999; Yadav, 2020). Socially responsible organizations play a crucial part in enhancing employees' retention and satisfaction and commitment (Hofman, & Newman, 2014; Ardito et al., 2018). Gond (2013) in his study examine the role of corporate social responsibilities on employee attitudes. Rupp et al. (2013) in her study suggests that employees' perceptions of CSR may be classified into four categories: altruistic, legal, ethical, and economic. The organization's financial performance and effect on stakeholders, including employees, suppliers, and shareholders, are both considered in economic CSR.

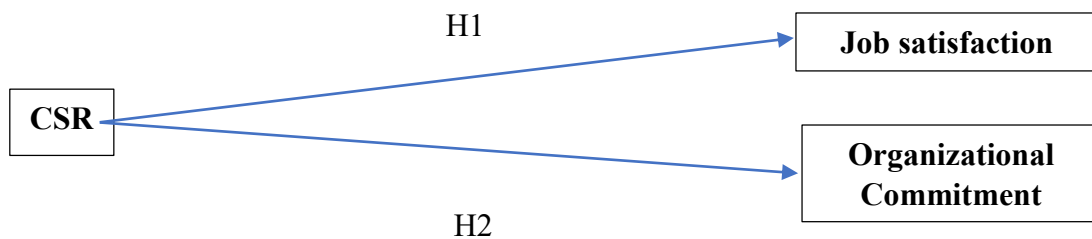
Employee pride in the firm, loyalty, and readiness to go above and beyond the call of duty can all rise if they believe that their employer is committed to ethical and sustainable business practises. For workers who feel they are making a difference in a bigger social or environmental cause, it can also provide them a sense of fulfilment and purpose (Brammer et al. 2012; Glavas, 2014). According Nazira (2020), employees' CSR participation improves their feeling of purpose and perceived meaningfulness, which in turn improves employee attitude such as commitment and employee engagement.

CSR initiatives often address social and environmental issues that are important to employees and society. When employees see their company taking steps to make a difference, it signals that the organization cares about more than just profits. This can strengthen the emotional bond between employees and the organization, leading to higher organizational commitment Koch, (2019). Hence we can hypothesize that:

*H2: There is a positive relationship between employee CSR attitudes and organizational commitment.*

The following is the proposed model for the study:

**Figure 1: Proposed Model for the Study**



## **METHODOLOGY**

The study adopted a non-probability purposive sampling approach (Leedy & Ormrod, 2005). The present study uses a quantitative methods for data collection. Total of 250 Employees from the different MSME in Mumbai were approached out of which 150 responses were received leading to a response rate was 60%.

## **MEASURES**

The questionnaire used in the survey consisted of two sections. Section A measures the demographic profile of the respondents while section B captures the CSR and Organizational Commitment of the employees.

Standardized scales were used to capture CSR (Tucker, 2009), Job Satisfaction ((Hackman & Oldham, 1975) and Organizational Commitment (Allen, Meyer, 2002). Respondents were asked to rate their level of agreement on each statement from “1” as “strongly disagree” to “7” as “strongly agree”.

The Quantitative data was analysed using the SPSS-26 Version. Quantitative research seeks the causes of social phenomena without involving the ‘outsider’ perspective and is outcome oriented (Oakley 1999, p.156) and involves large and representative sets of data (Blaxter, Hughes & Tight, 2008, p.64). The questionnaire was tested for its reliability and validity. Later Correlation and Regressions Analysis was conducted to attain the objectives of the present research.

## DATA ANALYSIS

Table 1 represents the demographic representation of the sample under study.

**Table 1: Demographic distribution**

Demographic Variable	Groups	Frequency	Percentage
Gender	Male	109	72.7
	Female	41	27.3
Marital Status	Married	67	44.7
	Unmarried	83	55.3
Hierarchy	Junior	78	52.0
	Middle	53	35.3
	Top	19	12.7

**Figure 2 (a), 2 (b), 2 (c) Demographic Distribution of the sample**

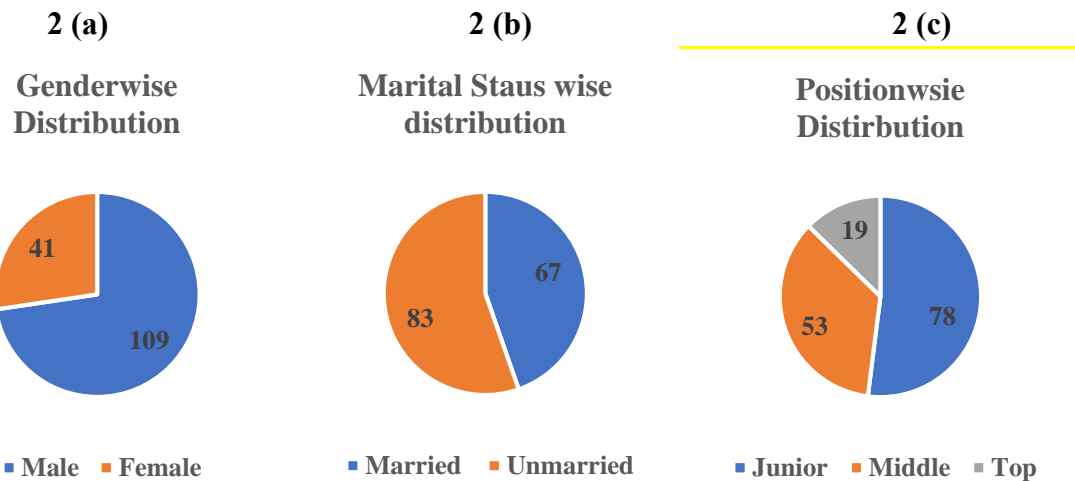


Figure 2 (a, b and c) represents the gender, marital status and position wise distribution of the sample under study.

The reliability of the measures indicates the extent to which it is without bias or error free and hence ensures consistent measurement across time and across various items in the instrument. In other words, reliability of a measure is an indication of stability and consistency with which the instrument measures the concept and helps to assess the “goodness” of a measure. Table 2 shows the reliability of the three variables.

**Table 2: Reliability Analysis**

Variable	Cronbach's Alpha	No of Items
CSR	0.888	18
Job Satisfaction	0.943	3
Organizational Commitment	0.899	6

The Cronbach alpha of three variable i.e. CSR, Job Satisfaction and Organizational Commitment is greater than 0.7(Nunnally & Bernstein, 1996). Hence the Questionnaires are reliable and can be used for further analysis. Later the validity of CSR scale was tested. EFA was conducted for the same and following factor structure emerged:

**Table 3: Rotated Component Matrix**

	Component			
	1	2	3	4
CSR1	.729			
CSR2	.743			
CSR3	.743			
CSR4	.729			
CSR5	.689			
CSR6	.522			
CSR7	.758			
CSR8	.682			
CSR9		.755		
CSR10		.746		
CSR11		.846		
CSR12		.719		
CSR13		.802		
CSR14			.708	
CSR15			.846	
CSR16			.823	
CSR17				.765
CSR18				.777
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				

Table 3 represents that there are four factors in the overall scale. The results harmonises with the original scale developed by Tucker (2009). We also calculated the convergent validity (CR) and average variance extracted (AVE). Both these values are found to be higher than the threshold values i.e. 0.5. Hence the validity of the CSR scale is established.

Correlation is a mutual relationship or connection between two or more variables. In our study the variables are CSR, JS and OC. We can find out the relation between these variables. Table 4 represents the Intercorrelations between the variables under study. It can be observed from Table 4 that none of the demographic variable is correlated with the variables under study. The results further confirm that CSR is significantly correlated with JS and Organizational Commitment.

**Table 4: Intercorrelation Matrix**

	<b>GENDER</b>	<b>MARITAL STATUS</b>	<b>HIERARCHY</b>	<b>CSR</b>	<b>OCT</b>	<b>JS</b>
<b>GENDER</b>	1					
<b>MARITAL STATUS</b>	.060	1				
<b>HIERARCHY</b>	.083	.019	1			
<b>CSR</b>	.064	.035	-.025	1		
<b>OC</b>	.061	.081	.078	<b>.429**</b>	1	
<b>JS</b>	.046	-.109	.022	<b>.299**</b>	<b>.235**</b>	1
**. Correlation is significant at the 0.01 level (2-tailed).						

Regression Analysis is a technique for determining the statistical relationship between two or more variables where a change in a dependent variable is associated with, and depends on, a change in one or more independent variables. In the study the Independent variable is CSR and Dependent Variables are Job Satisfaction and Organizational Commitment.

Table 5, 6 and 7 indicated the impact of CSR on job satisfaction.

**Table 5: Regression Analysis of CSR and JS**

<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>	<b>Change Statistics</b>				
					<b>R Square Change</b>	<b>F Change</b>	<b>df1</b>	<b>df2</b>	<b>Sig. F Change</b>
<b>1</b>	.299 <sup>a</sup>	.089	.083	2.869	.089	14.510	1	148	.000
a. Predictors: (Constant), CSR									

From Table 5 it can be observed that R Square is 8.9 %. The results suggest that the relation between CSR and job satisfaction is accepted at 99% confidence level.

Table 6 represents the results of ANOVA Analysis. With F = 14.51 and df=149, the test is highly significant, thus we can assume that there is a linear relationship between the variables in our model.

**Table 6: ANOVA Analysis of CSR and JS**

<b>Model</b>		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
<b>1</b>	Regression	119.445	1	119.445	14.510	.000 <sup>b</sup>
	Residual	1218.349	148	8.232		
	Total	1337.793	149			
a. Dependent Variable: JS						
b. Predictors: (Constant), CSR						

**Table 7: Beta Coefficients of CSR and JS**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	10.490	1.883		5.571	.000	6.769	14.211
	Total CSR	.100	.026	.299	3.809	.000	.048	.151
a. Dependent Variable: JS								

Table 7 represents the beta coefficients. The b coefficients tell us how many units' job satisfaction increases for a single unit increase in CSR.

Later we assessed the impact of CSR on OC. Table 8, 9, 10 indicated the impact of CSR on OC.

**Table 8: Regression Analysis of CSR and OC**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.429 <sup>a</sup>	.184	.179	4.682	.184	33.453	1	148	.000
a. Predictors: (Constant), CSR									

From Table 8 it can be observed that R Square is 18.4 %. The results suggest that the relation between CSR and OC is accepted at 99% confidence level.

Table 9 represents the results of ANOVA Analysis. With F = 33.453 and df =149, the test is highly significant, thus we can assume that there is a linear relationship between the variables in our model.

**Table 9: ANOVA Analysis of CSR and OC**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	733.216	1	733.216	33.453	.000 <sup>b</sup>
	Residual	3243.858	148	21.918		
	Total	3977.073	149			
a. Dependent Variable: OC						
b. Predictors: (Constant), CSR						

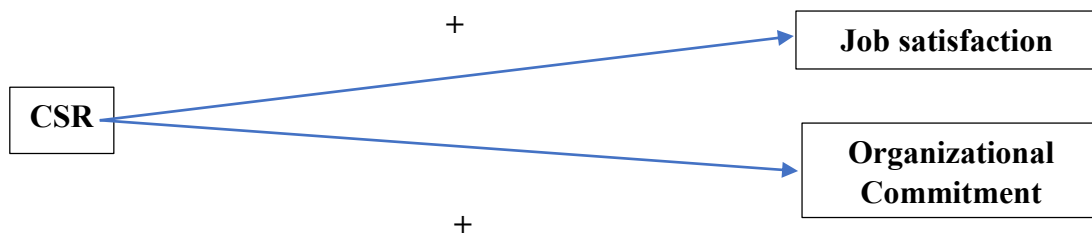


**Table 10: Beta Coefficients of CSR and OC**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	17.254	3.073		5.615	.000	11.182	23.325
	Total CSR	.247	.043	.429	5.784	.000	.163	.331
a. Dependent Variable: OC								

Table 10 represents the beta coefficients. The b coefficients tell us how many units' OC increases for a single unit increase in CSR.

Hence the final model of the study is as follows:

**Figure 3**

## DISCUSSION AND IMPLICATIONS OF THE STUDY

The regression results approve that both the dependent variables i.e. Job Satisfaction and organizational commitment have a significant relation with the independent variable.

Corporate Social Responsibility (CSR) holds significant importance in the banking sector for several reasons. Banks, as financial intermediaries, play a crucial role in the economy and have a broad impact on society (Chaurasia et al., 2020). Integrating CSR into their operations and business strategies allows banks to align their activities with societal needs, enhance their reputation, and contribute positively to sustainable development. This alignment promotes sustainable growth and reduces the likelihood of short-term decision-making that may harm the long-term viability of the bank and its stakeholders (Hofman, & Newman, 2014; Campanella et al. 2020).

A positive perception of CSR activities can enhance employee commitment, and job satisfaction, whilst a poor perception might have the opposite effect (Campanella et al. 2020). From the perspective of an employee, CSR is about matching their values with the organization's values. When employees see their company taking steps to make a difference, it signals that the organization cares about more than just profits (Gond, et al., 2017). CSR participation enables employees to perceive the values of the organization, which can lead employees to perceive higher morale, self-esteem, and fulfilment of their own needs and share values with their organization (Hofman, & Newman, 2014). As a result, CSR participation can

contribute to building a psychological link between employees and their organizations. In order to foster a sense of purpose and dedication among employees towards social and environmental objectives, it is crucial for the banking sector to involve employees in their CSR projects and to effectively convey the effects of their CSR practices (Lombardi et al. 2020).

This research is subject to limitations that also suggest interesting avenues for future research. The smaller sample size and the cross sectional nature of data is one of the key limitation of the present research. Future research can look into the impact of demographic variable on the CSR by collecting more data.

## CONCLUSION

The results of the study suggest that there is a significant influence of the independent variable i.e. CSR on the dependent variables of the study that is job satisfaction and organizational commitment.

The results indicates that employees favour to work for and identified with the organization if the organization is socially responsible towards natural environment, society and future generations, customers, and employees (Lombardi et al. 2020). It also improves public image, boosts employee engagement, attracts and retains investors, creates a positive workplace environment as well as increases professional and personal growth (Hofman, & Newman, 2014). By adopting CSR practices, banks can contribute to social progress, environmental protection, and economic stability, aligning their goals with broader sustainable development objectives. Organization needs to communicate their efforts effectively to their employees to enhance their perceptions towards CSR.

Overall, CSR in the banking sector is not only about fulfilling social responsibilities but also about recognizing the interdependence between businesses and society. Banks that actively embrace CSR are better positioned to create positive impacts, mitigate risks, and contribute to a more sustainable and inclusive economy.

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# Understanding the Impact of Employee Well-Being on Employee Retention

Riya Sodha\*

Pooja Goswami\*\*

## ABSTRACT

G20 places a lot of importance on health and well-being for a sustainable and equitable future. It has become the need of the hour, especially post-pandemic; and India is also focusing on Global Wellbeing. G20 has the power and capability to focus on all aspects of well-being worldwide. This initiative is possible only with the support of organisations working on well-being practices as employees spend more than half of their day at work but organisations always focus on returns, so this paper focuses on if employee well-being can work as a retention strategy for transforming business.

Employee Well-being has become very significant in today's post-pandemic world. Organizations all over the world are stressing the need for improving the well-being of their employees. The research conducted in this area shows that employee well-being and employee retention are related. Employees who are happy and healthy in their work environment are likely to stay with the organization for a longer duration. The main objective of this study is to understand the impact of employee well-being on employee retention. This research paper is inferential in nature, where both primary and secondary data have been used for the study. Primary data was collected with the help of a well-structured and tested questionnaire for both variables. This data was collected from 100 employees working in various sectors in Mumbai city. This data was analyzed by performing Pearson's Correlation and Regression Analysis on SPSS. Various research papers, articles, and websites were used to acquire secondary data.

The data analysis revealed that there is a positive correlation between employee well-being and employee retention. It was proved that there is a significant impact of employee well-being on employee retention.

**Keywords:** *Well-being, retention, employee well-being*

## 1. INTRODUCTION

### *1.1 Employee Well-being*

Employee well-being refers to the physical and emotional health of employees as a result of dynamics within and occasionally beyond the workplace. These include their interactions with co-workers, how they use tools and resources, how big corporate choices affect them personally and professionally, and a variety of other things.

*\*Recruitment Research Analyst, The Ally venture, Mumbai*

*\*\*Assistant Professor, Durgadevi Saraf Global Business School (DSGS), Mumbai*

According to (Meister, The Future of Work is Employee Well-Being, 2021), Future Workplace Academy has identified seven pillars of employee well-being to guide leaders as they prioritize the well-being of their workers. They are as follows:

- Physical well-being
- Career well-being
- Financial well-being
- Social well-being
- Community well-being
- Emotional well-being
- Purpose Driven well-being.

The Gallup Workplace has discovered 5 core elements of employee well-being. They are as follows:

- Career: This element refers to enjoying the work you do on a day-to-day basis.
- Social: This element refers to having meaningful friendships in your life.
- Financial: This element refers to how well you manage your money.
- Physical: This element refers to the energy to get things done.
- Community: This element refers to a likeness of the place you live at.

Investing in employee wellbeing can have a number of advantages, such as better work-life balance, better mental and physical health, higher levels of motivation and dedication, and increased job satisfaction. Employee engagement and well-being go hand in hand. Organisations can use Well-being programs to attract best employees. According to a study on presenteeism, persons who don't exercise or eat healthily are 66% more likely to have high presenteeism.

Employee retention refers to the efforts on the part of an employer aimed at creating an environment that supports the needs of current employees so that they can continue to be part of an organization. Industries, where attracting and hiring top talent can be a challenging task. Retaining high- performing employees not only helps organizations save on recruitment and training costs but also contributes to the overall success and growth of the company. In recent years, employee well-being has become a critical factor in employee retention. A workplace culture that prioritizes employee well-being can lead to a more satisfied and engaged workforce, which in turn can reduce employee turnover and increase organizational productivity.

Employee well-being refers to the physical, mental, and emotional health of employees in the workplace. A positive work environment that prioritizes employee well-being can lead to lower stress levels, increased job satisfaction, and improved employee morale. Research has shown that employees who feel supported and valued by their employers are more likely to stay with their current organization, as they are less likely to experience burnout or feel overworked. One of the key factors that impact employee wellbeing is workplace flexibility. Flexibility in

the workplace can take many forms, such as flexible work hours, telecommuting, and job-sharing. These options can help employees achieve a better work-life balance, which can contribute to their overall wellbeing. Research has shown that employees who have greater control over their work schedule report higher job satisfaction and are more likely to stay with their current employer.

Another critical factor in employee wellbeing is a supportive workplace culture. Employers who prioritize employee wellbeing can create a culture of support and care that can have a positive impact on employee retention. This can be achieved through programs that promote mental and physical health, such as wellness programs, mental health resources, and employee assistance programs. A supportive workplace culture can also be demonstrated through the provision of opportunities for professional growth and development, recognition and rewards programs, and a commitment to work-life balance.

### ***1.2 Employee retention***

Employee retention is essential for the long-term success of an organization, and employee wellbeing is a critical factor in achieving this goal. By prioritizing employee wellbeing, organizations can create a positive work environment that fosters employee satisfaction, engagement, and loyalty. This, in turn, can lead to reduced employee turnover, improved organizational productivity, and enhanced financial performance. Organizations that prioritize employee well-being are not only more likely to retain top talent but are also more likely to create a culture of care and support that benefits all employees

### ***1.3. Theories related to Well-being:***

#### **➤ Self-determination theory of motivation:**

Self-Determination Theory (SDT) is a widely recognized framework in psychology that explores human motivation and its relationship to well-being. Developed by Deci and Ryan in the 1980s, SDT posits that individuals have innate psychological needs for autonomy, competence, and relatedness. When these needs are satisfied, it can lead to enhanced well-being. Here's how SDT relates to well-being:

#### **1. Autonomy:**

- Autonomy is the need to feel self-directed and in control of one's actions and decisions.
- When individuals have the autonomy to pursue their goals and make choices aligned with their values, they are more likely to experience greater well-being. This sense of personal agency contributes to a sense of fulfillment and satisfaction.

#### **2. Competence:**

- Competence refers to the need to feel capable and effective in one's actions and pursuits.

- When individuals engage in activities that challenge them appropriately and provide opportunities for growth and skill development, they experience a sense of competence. This leads to increased self-esteem and well-being.

### **3. Relatedness:**

- Relatedness is the need for social connection, belonging, and meaningful relationships with others.
- When people have positive and supportive relationships with others, they are more likely to experience well-being. Social connections provide emotional support, opportunities for sharing experiences, and a sense of belonging.

SDT suggests that individuals who have their autonomy, competence, and relatedness needs met are more likely to experience intrinsic motivation. Intrinsic motivation refers to engaging in activities for the inherent satisfaction and enjoyment they provide rather than for external rewards or pressures. Intrinsic motivation is associated with higher levels of well-being because it fosters a sense of fulfillment and personal growth.

Conversely, when individuals are motivated primarily by external factors such as rewards, punishments, or social pressure (extrinsic motivation), their well-being may be compromised. Excessive external control can undermine autonomy and lead to feelings of frustration and decreased well-being.

In summary, the Self-Determination Theory of motivation suggests that individuals who have their basic psychological needs for autonomy, competence, and relatedness satisfied are more likely to experience intrinsic motivation and higher levels of well-being. This theory has practical implications for promoting well-being in various contexts, including education, work, and personal relationships, by creating environments that support individuals' autonomy, competence, and relatedness.

### **➤ Theories of Emotion:**

Understanding how emotions work is essential for emotional regulation. Emotion regulation refers to the ability to manage and control one's emotions effectively. Individuals who can recognize and understand their emotional responses are better equipped to regulate them, leading to better emotional well-being. For instance, knowing that certain situations trigger anxiety allows people to implement strategies to manage anxiety and improve well-being.

The three major emotion theories are as follows:

1. James-Lange Theory: Emotions are a result of your body's physiological responses to external stimuli. For example, you feel fear because your body reacts with increased heart rate and trembling in response to a threat.
2. Cannon-Bard Theory: Emotions and physiological responses happen simultaneously but independently in response to a stimulus. Seeing a snake, for instance, triggers both



fear (emotion) and physical reactions like a racing heart at the same time.

3. Schachter-Singer Two-Factor Theory: Emotions stem from a combination of physiological arousal and cognitive appraisal. Your body's arousal is interpreted based on context; the same physical arousal can lead to different emotions depending on how it's mentally processed. For instance, physiological arousal can be fear in a dangerous situation or excitement at a fun event.

➤ **Theories on Mental Health and Well-being:**

**1. Psychodynamic Theory (Freudian Theory):**

- Developed by Sigmund Freud, this theory emphasizes the role of unconscious conflicts and early childhood experiences in shaping mental health.
- Freudian theory suggests that unresolved conflicts and repressed thoughts and feelings can lead to mental disorders.
- Psychoanalysis, a therapy based on this theory, aims to bring these unconscious conflicts into conscious awareness for resolution.

**2. Cognitive-Behavioral Theory (CBT):**

- CBT focuses on the role of thoughts, beliefs, and behaviors in mental health.
- It suggests that distorted thinking patterns and maladaptive behaviors contribute to mental health issues.
- CBT therapies aim to identify and change negative thought patterns and behaviors to improve mental well-being.

**3. Humanistic-Existential Theory:**

- Humanistic theories (e.g., Maslow's Hierarchy of Needs) emphasize the importance of self-actualization and personal growth for mental health.
- Existential theories focus on the search for meaning and authenticity in life.
- These theories suggest that mental health issues can arise when individuals feel disconnected from their authentic selves or lack a sense of purpose and meaning.

**4. Social Learning Theory:**

- This theory suggests that behavior, including mental health, is learned through observation, reinforcement, and modeling.
- It highlights the role of environmental factors, social context, and learned behaviors in mental health problems.
- Interventions often involve changing learned behaviors and providing positive reinforcement for healthier ones.

➤ **PERMA Theory of Well-being:**

PERMA theory is a framework for understanding and promoting well-being developed by Martin Seligman, a prominent figure in the field of positive psychology.

The theory identifies five essential elements that contribute to human well-being, with each letter in "PERMA" representing one of these elements:

1. **Positive Emotions (P):** Positive emotions refer to feelings of happiness, joy, gratitude, love, and other positive affective states. Experiencing these emotions contributes to overall well-being. Cultivating positive emotions can be done through activities like expressing gratitude, engaging in enjoyable hobbies, and fostering positive social connections.
2. **Engagement (E):** Engagement, also known as "flow," occurs when individuals are fully immersed in and absorbed by an activity. It's the feeling of being "in the zone" and completely focused on a task that matches one's skills and challenges. Engaging activities provide a sense of fulfillment and well-being.
3. **Relationships (R):** Positive and meaningful relationships with others are a fundamental aspect of well-being. Strong social connections, whether with family, friends, or a community, provide emotional support, a sense of belonging, and opportunities for personal growth.
4. **Meaning (M):** Meaning refers to the sense of purpose and significance in life. It involves pursuing goals and values that align with one's beliefs and passions. Finding meaning can come from activities like helping others, contributing to a cause, or engaging in spiritual or philosophical exploration.
5. **Accomplishment (A):** Accomplishment involves setting and achieving goals, which leads to a sense of competence and mastery. Accomplishing tasks and reaching milestones contributes to self-esteem and overall well-being. Setting realistic and attainable goals is key to this element.

Seligman and other positive psychologists argue that these five elements are essential for human flourishing and that individuals who experience these elements in their lives are more likely to lead fulfilling and mentally healthy lives. The PERMA model has been used in various fields, including psychology, education, and workplace well-being programs, to help individuals and organizations cultivate greater well-being and life satisfaction.

It's important to note that while the PERMA model provides a valuable framework for understanding well-being, individual well-being is a highly personal and subjective experience. Different people may prioritize and experience these elements differently, and well-being is influenced by various factors, including culture, personality, and life circumstances.

## **2. LITERATURE REVIEW**

The Literature review is arranged in chronological order, and it consists of an introduction, findings, and interpretation arrived from various papers, articles, and journals related to the research topic.

## ***2.1 Employee Well-Being***

(Vella-Brodrick, 2008) In this paper, it was proposed that employee well-being consists of three core components- Subjective well-being, Workplace well-being, and psychological well-being. It was argued that employee well-being is an important precursor to organizational well-being, as indicated by its links to employee turnover and performance. A solid framework for understanding and measuring employee well-being is offered in the hope that it will foster a more integrated approach to assessing and optimizing employee well-being.

(The Bigger Picture of Employee Well-Being: Its Role for Individuals, Families and Societies, n.d.) This paper by SHRM summarizes the impact of employee well-being on job-related outcomes such as attendance and productivity and non-work outcomes such as diseases and mortality. It also talks about how government and organizational policies can promote well-being.

(Christian Krekel, 2019) This study examines whether higher employee well-being leads to higher productivity, and ultimately, tangible benefits to the bottom line of the business. This was studied in a meta-analysis of 339 independent research studies, including the well-being of 1,882,131 employees and the performance of 82,248 business units, originating from 230 independent organizations across 49 industries in the Gallup client database. It was concluded that there is a significant, strong positive correlation between employees' satisfaction with their company and employee productivity and customer loyalty, and a strong negative correlation with staff turnover. Ultimately, higher well-being at work is positively correlated with more business-unit-level profitability.

(Meister, 2021) This article highlights the importance of well-being in the workplace. The Future Workplace 2021 HR Sentiment survey found that 68% of senior HR leaders (of which 40% were CHROs) rated employee well-being and mental health as a top priority. In the future workplace virtual summit, it was discovered that 70% of senior leaders offer workplace flexibility as a part of well-being. Half of them supplement this with well-being benefits such as free online counseling sessions.

(Marta Juchnowicz, 2021) The main purpose of this paper is to analyze the relationship between remote working and employee well-being. The research hypothesis was that there is a relationship between employee well-being and the level of digitization of work performed, as measured by the frequency of remote working. This article contains the findings of empirical research that was carried out in January 2021 on a sample of 1000 Polish workers. The analyses included logistic regression and exploratory factor analysis. The findings highlight the three dimensions of employee well-being, which also include relationships at work, physical health, and work-life balance. The findings indicated that working solely remotely has a detrimental impact on well-being in terms of connections at work and work-life balance. There was no statistically significant association between remote working and subjective health assessment.

(Moovala, 2021) This study's primary objective was to evaluate the importance of employee

well-being in Bahraini organizations. The five dimensions of the employee well-being model served as the study's foundation. The five domains are - the health domain, the work domain, the values/principles domain, the collective/social domain, and the personal growth domain. According to the study, the majority of the participating organizations gave physical safety and physical health more attention than they did to mental health.

(Bloom, 2021) Dr. Bloom and his team have identified four dimensions of wellbeing for working adults as a way to measure happiness, as mentioned in the “Wellbeing Model”:

- Resilience: Our capacity to adapt, change, and respond to life’s challenges. It enables us to recover from setbacks, to grow, and to develop new capabilities.
- Thriving: The meaning and significance we experience in our lives; our values, core beliefs, and sense of life purpose; and our experience of deep social connections.
- Authenticity: Our sense of identity, which includes the beliefs we hold about who we are as human beings, our self-image and self-worth, and our sense of respect and dignity.
- Happiness: The emotional dynamics and the subjective quality of our daily lives. Happiness is linked to enhanced health, creativity, decision-making, and adversity response.

(Ibrahim Al-Jubari, 2022) Through the mediating influence of perceived stress during the COVID-19 pandemic, this research explores the direct and indirect consequences of employees' flexibility, work-family conflict, and organizational response on employees' well-being. Data from 184 workers in diverse Malaysian organizations were gathered, and Smart-PLS Structural Equation Modeling with the bootstrapping process was used to analyze the data. The findings showed that, with the exception of organizational responsiveness, which has no direct impact on wellbeing, work-family conflict, adaptability, and perceived stress all directly influence perceived stress and wellbeing. Additionally, it was discovered that perceived stress, but not adaptability, modulates the association between organizational responsiveness and work-family conflict with well-being.

(Psychol, 2022) According to this study, employee well-being has four components: job satisfaction, life satisfaction, positive affect, and negative affect. Each dimension interacts with the others and is interrelated. Therefore, it is difficult and ambiguous to quantify employee well-being. This study seeks to establish the relationship between indicators' preferences, create a measurement model from the standpoint of multi-criteria decision-making, and address the measurement of employee well-being as a fuzzy problem.

(Establishing Healthy Workplaces: A Case Study on the Employee Well-Being Initiatives in the IT sector, 2022) The present paper attempts to study employee well-being initiatives in the IT sector. The IBEF report on the information technology industry, yearly reports from particular IT companies, journal articles in Google Scholar, media, and business websites are used as secondary sources of data to achieve the paper's goal. The results show that many businesses in the IT industry support staff wellbeing by providing various initiatives and

resilience-building training and that many more are adopting a preventative approach to stress management by attempting to identify dangers and causes. However, there is still a lack of focus on financial wellbeing in this sector.

(Mental health and well-being in the workplace, 2022) Deloitte Touche Tohmatsu India LLP (DTTILLP) undertook a survey titled 'Mental health and well-being in the workplace' in order to analyze the current state of mental well-being amongst Indian employees and the challenges in managing their mental well-being. The survey was conducted and analyzed during the end of 2021 and the first half of 2022. The analysis is based on the responses from 3,995 employees. According to the survey, 80 percent of the Indian workforce has reported mental health issues during the past year. Despite these alarming numbers, societal stigma prevents around 39 percent of the affected respondents from taking steps to manage their symptoms. Additionally, our survey found that at the workplace, 33 percent of all respondents continued to work, despite poor mental health, while 29 percent took time off and 20 percent resigned to better manage their mental health.

(Health and well-being at work, 2022) This survey report was published by CIPD in April 2022. It provides a wealth of benchmarking data on key areas like mental health, managing attendance, and upskilling line managers to support wellbeing. The key findings of the survey revealed that: There is less management focus on health and wellbeing compared with the first year of the pandemic. Seven in ten (70%) of HR respondents agree that employee wellbeing is on senior leaders' agendas (down from 75% last year) and 60% believe that line managers have bought into the importance of wellbeing (down from 67% last year).

## ***2.2 Employee Retention***

(Subhash C. Kundu, 2017) The current study's objective is to examine the role that organizational engagement plays as a mediator in the link between a supportive work environment (SWE) and employee retention. A sample of 211 respondents from 67 organizations was analyzed for the purpose of this study. The results imply that SWE is an important factor in determining employee retention. SWE and employee retention are related, with organizational engagement serving as a partial mediator.

(Gorde, 2019) This study stresses employee retention strategies and the problems of employees in the organization. It seeks to identify how retention strategies reduce employee turnover. This study is based on Descriptive Research Design and involved administering questionnaires among 10 employees in each of the six medium-scale industries. The total sample size was 60. The key findings of the study were: that relationship between employees and management is the most important component to increase the retention of employees in the organization. Compensation and monetary benefits are major motivators to stay in the organization. Apart from this, benefit programs and career opportunities also play a major role in retaining employees.

(D.Swaroop, 2019) The objective of this study is to determine how various employee

retention tactics, such as performance-based bonuses, flexible work schedules, timely promotions, and career development programs, affect both employee performance and retention. The study's findings indicated that employee retention techniques had a favorable impact on both employee performance and retention. The following broad factors were examined in-depth in this study: health and wellness benefits, personal growth, compensation, work-life balance, recognition and rewards for top performers, superior-subordinate relationships, training and development, job characteristics and commitment, monetary rewards, and welfare programs. Data from 615 self-administrative questionnaires were collected, and SPSS v20 software was used to analyze the data. The findings showed that effective staff retention methods are crucial to both high levels of employee retention and business performance.

(Prof. Sugandha Sinha, 2022) The main purpose of the study was to determine the retention strategies used by organizations to retain their employees for a longer period of time. This was done using a survey of employers and employees of selected companies. The sample size of the study was 31 respondents of employees, and 8 respondents of employers of different companies based in Vadodara. The study was tested on the basis of 2 factors: the impact of work-life balance on employee retention, and the impact of communication and constructive feedback on employee retention. The data analysis and findings revealed that there is a significant impact of work-life balance and communication on employee retention.

### ***2.3 Impact of employee well-being on employee retention***

(Miller, 2010) This article states that the principle wellness index of 2010 revealed that 40% of Americans working in small to medium-sized companies say that they would stay at their jobs longer because of employer-sponsored wellness programs. The survey found that as a result of workplace wellness programs, 40 percent of workers say they are encouraged to work harder and perform better and 26 percent miss fewer days of work by participating in such programs

(Prof.(Dr.) Sanjay D. Khairnar) This paper focuses on the relationship between the health & well-being practices of employees, and employee engagement, and employee retention. For the purpose of this study, 30 employees from a manufacturing company in Nashik were selected as a sample. This study revealed that when an organization follows health & well-being practices, employees feel that the organization is taking care of them and thus, employees tend to stay longer with the organization.

(Debra Wein, 2018) This Forbes article posted statistics from various sources regarding the connection between wellness programs and employee retention. They discovered that 87% of employees choose employers based on the health and wellness programs available in the organization. 67% of employees like their jobs when working for companies offering wellness programs. 58% of millennials think company wellness programs are an essential consideration when looking for a job. In addition, 54% of Generation Z say the same thing. 45% of employees in small businesses and medium-sized businesses claim that wellness programs would make

them stay with their employers a lot longer.

(Hassan Ismail, 2019) This study examined how employee well-being impacts employee retention. For the purpose of this study, a sample of 238 employees from Syrian Private Financial Institutions located in Damascus was taken. The hypothesis of the study was, that there is a positive impact of psychological and workplace well-being on employee retention. This hypothesis was accepted, and the study concluded that psychological and workplace well-being positively impacts employee retention.

### **3 RESEARCH METHODOLOGY**

#### **3.1 Research Design**

This research is based on a quantitative study. A total of 100 respondents filled the questionnaire which was collected via online mode. The questionnaire tried to analyze the impact of employee well-being on employee retention. This study is limited to working professionals from various sectors in Mumbai. The sampling method used for this study was convenience sampling. This technique was adopted as it helped the researcher access the target sample working in different sectors in the city of Mumbai.

#### **3.2 Research Objectives**

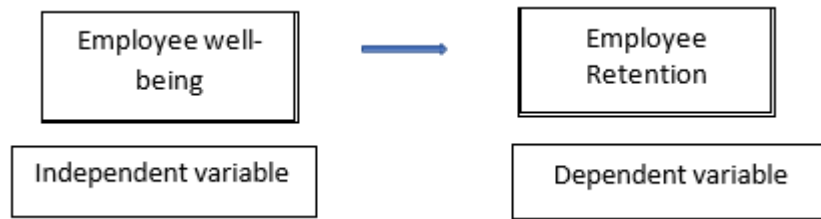
- To study and analyze the impact of employee well-being on employee retention.
- To determine the employees' likelihood of staying with the organization.

#### **3.3 Variables of the study**

The variables in this study are Employee Well-being and Employee Retention. Employee Retention will be the dependent variable, and Employee Well-being will be the independent variable.

If employees feel their health and well-being are not important to their employer, they might quit their jobs for greener pastures. And so, many employers have started making employee health and well-being an integral part of their workplace strategies. Offering holistic well-being solutions is a great way to ensure all-around prosperity. Be it financial, physical, mental, or emotional health, providing the best-suited employee well-being solutions can help in long-term engagement, well-being, and retention.

**Figure No. 1 Conceptual Framework**



*Source: Created by author*

### **3.4 Data Collection**

The present study aims to understand the impact of Employee Well-being on Employee Retention. For this purpose, both primary and secondary data was used.

- Primary data was collected through a structured and tested questionnaire, for which sample a of 100 employees from various sectors have been taken for the study.
- Secondary data was used to understand both the variables of the study and the relationship between them. For this purpose, various research papers and articles were used.

#### **3.4.1. Sample size:**

The sample size used for this research was 100, as many statisticians concur that a sample size of 100 is the minimum we need for meaningful results. This sample consisted of respondents working in various sectors such as IT, automobile, FMCG, e-commerce, financial services, banking, and other sectors. Due to the limitation of time, the sample could not be stratified, and the convenience sampling method was used for this research.

#### **3.4.2. Instrument:**

- The questionnaire includes 3 sections: Basic Demographics, Well-being scale, and Employee Retention. A 5-Point Likert scale format was used, and the scores are on the scale from 1: Strongly Disagree to 5: Strongly Agree.
- Employee well-being was measured using a tested questionnaire from UWES (Work and well-being survey).
- Employee Retention was measured using a tested questionnaire from the study (Kyndt et al., 2009)

#### **3.4.3. Hypotheses:**

- Null Hypotheses (Ho): There is no impact of Employee Well-being on Employee Retention
- Alternative Hypotheses (H1): There is a significant impact of Employee Well-being on Employee Retention



#### **3.4.4. Statistical techniques to be used:**

- Cronbach Alpha is performed using SPSS to test the reliability for both the variables.
- Pearson's Correlation has been used to test the strength of linear relationship between the variables.
- Regression analysis has been used to analyze the impact of employee well-being on employee retention.

### **4. ANALYSIS AND INTERPRETATION**

The purpose of this research was to understand the relationship between Employee Well-being and Employee Retention. For this purpose, primary data was collected through a questionnaire which was circulated among employees working across various sectors. The questions included 8 statements of employee well-being and 8 statements of employee retention on a Likert scale. Correlation and regression were used to study the connection between the variables under investigation. The data collected from the study was tabulated and analysed using SPSS. The findings of the research are given below.

#### ***Demographics***

65% of the respondents of this study are female, and 35% of the respondents are male. The age groups of the respondents of this study: 58% of the respondents are from the age group of 20-30, 19% of the respondents are from the age group of 30-40, 15% of the respondents are from the age group of 40-50, and 8% of the respondents are from the age group of 50 and above. The respondents are working for different industries like 6% of the respondents are from the Automobile sector, 8% are from banking, 15% are from IT, 9% are from E-commerce, 25% are from financial services, 13% are from FMCG, and 24% of the respondents are from other sectors.

#### ***Reliability Analysis***

The reliability of both the variables i.e., employee well-being and employee retention were computed using SPSS software. The independent variable in this research is employee well-being and dependent variable is employee retention. Cronbach's alpha reliability coefficients were computed to calculate the reliability of all items in the questionnaire.

***Table 4.1***

<b>Variables</b>	<b>Cronbach's Alpha</b>	<b>Number of Items</b>
Employee Well-being	0.935	8
Employee Retention	0.804	8

From the reliability test, it has been analysed that Cronbach's Alpha value for both the variables is above 0.7 so it is considered a reliable and acceptable index and proves that the questionnaire is acceptable and reliable.

## Correlation Analysis

The strength of the relationships between employee well-being and employee retention were evaluated using bi-variate correlation analysis (Pearson's correlation). The intercorrelation among the variables is presented in the correlation matrix in Table 1.2. Coefficient values between .10 and .30 are considered weak, those between .40 and .60 are considered moderate, and those over .70 are considered high or strong.

**Table 4.2**

Correlations			
Total Retention Score			Total wellbeing Score
Pearson Correlation	Total Retention score	1	0.722
	Total wellbeing score	0.722	1
Sig. (1-tailed)	Total Retention score	.	<.001
	Total wellbeing score	0	.
N	Total Retention score	100	100
	Total wellbeing score	100	100

The above table shows that there is a positive correlation between employee well-being and employee retention. This shows that employee well-being and employee retention are 72.2% related to each other. This means that if the organization takes measures to improve the well-being of employees, then it will be able to retain its employees for a longer period of time. Employees with a high well-being score will stay longer with their organization and vice versa.

### 4.1. Regression Analysis

Regression is a statistical technique which is used to formulate the model and analyse relationship between employee well-being and employee retention. Regression Analysis has been performed to substantiate the study as to whether employee well-being impacts employee retention or not. For this analysis, the confidence interval was kept at 95%. In order to accept the alternate hypothesis, the significance value should be less than 0.05.

The results of regression analysis is displayed below.

**Table 4.3**

Model Summary									
						Change Statistics			
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.722*	.521	.516	1.650	.521	106.664	1	98	<.001
a. Predictors: (Constant), Total Wellbeing score									

**Table 4.4**

ANOVA <sup>a</sup>						
Model	Sum of Squares		Df	Mean Square	F	Sig.
1	Regression	290.28	1	290.284	106.66	<.001 <sup>b</sup>
	Residual	266.71	98	2.721		
	Total	556.99	99			
a. Dependent Variable: Total Retention score						
b. Predictors: (Constant), Total wellbeing score						

**Table 4.5**

Coefficients*								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	16.36	.902		18.14	<.001	14.566	18.144
	Total Wellbeing Score	.296	.029	.722	10.33	<.001	.239	.353
a. Dependent Variable: Total Retention Score								

In table 4.3, R represents the correlation between Employee Well-being and Employee Retention. This explains that both the variables are 72.2% correlated. R Square shows the total variation in employee retention that could be explained by employee well-being. This shows that employee well-being explains 52.1% of the variation in employee retention. Adjusted R Square explains the actual model fit. This means that our actual model fit is 51.6%. This means that 51.6% of the variations of Y (Employee Retention) around the mean can be explained by the independent variable X (Employee Well-being). Sig. F Change value in this table is 0.001 which is less than 0.05. This means that our model is significant.

The ANOVA (Analysis of Variance) table is a statistical tool used to evaluate the overall significance of a regression model. In regression analysis, the ANOVA table helps to test whether the regression model as a whole explains a significant proportion of the variation in the dependent variable.

The ANOVA table breaks down the total variation in the dependent variable into two components: the variation explained by the regression model (the "regression sum of squares") and the unexplained variation (the "residual sum of squares"). The ratio of the regression sum of squares to the residual sum of squares is used to calculate the F-statistic, which is used to test the overall significance of the regression model. 95% confidence interval is chosen for the study. In Anova table (Table 4.4), p-value is 0.001 which is less than 0.05, therefore the result is significant.

In the coefficient table (Table 4.5), the significant value is 0.001 which is less than 0.05, which shows there is an association between employee well-being and employee retention.

Hence, we accept the alternative hypothesis (H1) which says that there is a significant impact of Employee Well-being on Employee Retention.

**Regression Equation:  $ER = 16.355 + 0.296 (EW)$**

Where, ER stands for Employee Retention, and EW stands for Employee Well-being.

## **LIMITATIONS OF THE STUDY**

This research paper gives various insights into employee well-being and explores only a few factors of well-being. The research study was conducted on a sample size of 100 because of which the statistical tests would have not been able to identify the significant relationships between the parameters which further reduces the scope of the study. A bigger sample size sets out an opportunity for more accurate data. The sample is limited to Mumbai only.

## **FUTURE DIRECTION**

This research could be further extended with a larger sample size covering a different demographic segment which would lead to more inferences. The research can be extended to other environmental factors as well as to other well-being scales. The research can be concentrated on a specific sector and also on a specific well-being type. The well-being can also be studied with other mediating variables and also with different outcomes.

## **FINDINGS AND RECOMMENDATIONS**

The study revealed that there is a positive relationship between Employee Well-being and Employee Retention. This means when well-being increases, retention also increases, and vice versa. There is a significant impact of Employee Well-being on Employee Retention. When employees are happy and healthy in their jobs, they tend to stay longer with their company as compared to those who are not healthy physically, mentally, and financially. It was also found through this research that employees having a high well-being score are more satisfied with their organizations as compared to those with a low well-being score. Employees having high well-being are more likely to look for new opportunities in their own organizations and are less likely to accept attractive offers from other organizations.

Organizations should look after the physical, mental, and financial well-being of their employees and improve their retention rates by taking initiatives such as: Organizations should regularly survey their employees to get feedback on their level of well-being and identify areas where they feel unsupported. This feedback can be used to inform the development of targeted interventions to improve employee well-being and retention.

Organizations should provide various health benefits such as annual health check-ups, health insurance protection plans, and medical allowances to their employees to ensure they stay in good health.

In order to improve the financial well-being of employees, organizations should provide fair compensation according to the prevailing wages in the market. They should also offer perks such as insurance, retirement plans, and paid time-off. Organizations should offer flexible work schedules such as flexible start and end timings, telecommuting, job sharing, and work from home. This can help employees better manage their work-life balance and reduce stress. One of the most important factor to improve well-being of employees is to provide them a proper balance between their personal and professional life. Work overload creates stress among employees and affects their health. Hence, it is very important to look after this factor. Employees want to grow in their job, and not just stay stagnant. If good growth opportunities are provided to them, they will be happy in their organization and would stay longer. They can consider offering wellness programs that promote physical and mental health. For example, you could offer yoga or meditation classes, healthy eating programs, or mental health counselling services. Foster a positive work culture that promotes open communication, mutual respect, and teamwork. Create a culture where employees feel valued, appreciated, and supported.

## **CONCLUSION**

In conclusion, employee well-being plays a significant role in employee retention. As this study revealed that there is a positive and significant impact of employee well-being on employee retention, we can say that - organizations that prioritize the well-being of their employees tend to have a more engaged and productive workforce, which leads to reduced turnover rates. Research has consistently shown that employees who feel supported, valued, and recognized by their employers are more likely to remain loyal to their organization and contribute positively to its growth.

Moreover, the benefits of employee well-being extend beyond employee retention. A focus on employee well-being can also lead to higher job satisfaction, improved mental health, and better overall work-life balance. This, in turn, can lead to increased productivity, innovation, and a positive work culture.

As such, employers should prioritize employee well-being and create a work environment that fosters it. This can be achieved through initiatives such as offering wellness programs, providing a supportive work culture, and giving employees autonomy and flexibility. By doing so, organizations can create a win-win situation, where employees thrive and remain committed to their organization, while the organization benefits from a productive and engaged workforce.

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## APPENDIX

### Section 1: Demographic details

- |   |  |
|---|--|
| <p>1. Gender</p> <ul style="list-style-type: none"> <li>• Male</li> <li>• Female</li> <li>• Prefer not to say</li> </ul>  | <ul style="list-style-type: none"> <li>• Disagree</li> <li>• Neutral</li> <li>• Agree</li> <li>• Strongly Agree</li> </ul>   |
| <p>2. Age group</p> <ul style="list-style-type: none"> <li>• 20-30</li> <li>• 30-40</li> <li>• 40-50</li> <li>• 50 and above</li> </ul>   | <p>3. I am enthusiastic about my job.</p> <ul style="list-style-type: none"> <li>• Strongly Disagree</li> <li>• Disagree</li> <li>• Neutral</li> <li>• Agree</li> <li>• Strongly Agree</li> </ul>                          |
| <p>3. Which sector do you belong to?</p> <ul style="list-style-type: none"> <li>• Automobile</li> <li>• Banking</li> <li>• IT</li> <li>• E-commerce</li> <li>• Financial services</li> <li>• FMCG</li> <li>• Other</li> </ul> | <p>4. My job inspires me</p> <ul style="list-style-type: none"> <li>• Strongly Disagree</li> <li>• Disagree</li> <li>• Neutral</li> <li>• Agree</li> <li>• Strongly Agree</li> </ul>                                       |
| <p>4. Years of experience in current company</p> <ul style="list-style-type: none"> <li>• 0-2 years</li> <li>• 2-4 years</li> <li>• 4-6 years</li> <li>• 6 years and above</li> </ul>   | <p>5. When I get up in the morning, I feel like going to work.</p> <ul style="list-style-type: none"> <li>• Strongly Disagree</li> <li>• Disagree</li> <li>• Neutral</li> <li>• Agree</li> <li>• Strongly Agree</li> </ul> |

### Section 2: Employee Well-being

- |  |   |
|--|---|
| <p>1. At my work, I feel bursting with energy.</p> <ul style="list-style-type: none"> <li>• Strongly Disagree</li> <li>• Disagree</li> <li>• Neutral</li> <li>• Agree</li> <li>• Strongly Agree</li> </ul> | <p>6. I am proud of the work I do.</p> <ul style="list-style-type: none"> <li>• Strongly Disagree</li> <li>• Disagree</li> <li>• Neutral</li> <li>• Agree</li> <li>• Strongly Agree</li> </ul>              |
| <p>2. I find the work I do full of meaning and purpose.</p> <ul style="list-style-type: none"> <li>• Strongly Disagree</li> </ul>  | <p>7. At my job, I am very resilient, mentally.</p> <ul style="list-style-type: none"> <li>• Strongly Disagree</li> <li>• Disagree</li> <li>• Neutral</li> <li>• Agree</li> <li>• Strongly Agree</li> </ul> |



8. At my work I always keep going, even when things do not go well.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

### Section 3: Employee Retention

1. Within this company, my work gives me satisfaction.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

2. If I wanted to do another job or function, I would look first at the possibilities within this company.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

3. I see a future for myself within this company.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

4. If it were up to me, I will definitely be working with this company for the next five years.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

5. If I received an attractive job offer from another company, I would take the job.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

6. It doesn't matter if I'm working for this company or another, as long as I have work.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

7. If I could start over again, I would choose to work for another company.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

8. I love working for this company.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

# Tool Development toward Corporate Economic Health Analysis: A Case Theoretic Perspective

Sandesh Kolhe\*

Sumana Chaudhuri\*\*

## ABSTRACT

The paper proposes a model for analyzing and comparing the financial performance of companies using various tools and metrics like historical statement analysis, ratio analysis, peer analysis, forecasting of sales growth, EBITDA, EPS, and common size financial statement. The model gives a comprehensive picture of each company's financial health. The paper applies the model to the Indian oil sector, which is a volatile and competitive industry. The paper compares the financial performance of four major Indian oil companies: Reliance Industries, Hindustan Petroleum, Bharat Petroleum, and Indian Oil Corporation. The novelty of the model presented in this paper lies in its application of various techniques of financial analysis to give a comprehensive picture of the financial performance of oil companies. The model applies different techniques of financial analysis, such as historical statement analysis, ratio analysis, forecasting, and common size statements. Historical statement analysis tracks the financial performance of each company over time. Ratio analysis compares the financial performance of each company with its peers and with industry averages. Peer analysis identifies companies that are similar in their size, operations, and financial performance. Forecasting predicts the future financial performance of each company. Common size statements standardize the financial statements of each company, making them easier to compare.

The paper shows how the model as a template can be used to help investors, analysts, and stakeholders make better decisions about any sector, they are concerned with, and as a case theoretic perspective, in this paper, about the oil sector. The paper also suggests how the model can help the companies improve their performance and competitiveness.

**Key words:** *Historical Statement Analysis, Ratio Analysis, Peer Comparison, Forecasting, Common Size Statement*

## INTRODUCTION

Everyone who has a stake in a company or business is primarily interested in how well it is performing financially, but this is especially true of investors, both potential and current. The reported financial statements used for measuring a firm's financial health include a qualitative appraisal of the company's position and a report on how the company has used its capital in production. Bhunia et al. (2011) claim that financial performance analysis entails using reported results in a company's financial statements to obtain the quantitative performance characteristics of a company with the goal of determining how effectively the company has used its resources in accordance with the decisions made by the management.

\* Student, FYMMS, Durgadevi Saraf Institute of Management Studies, Mumbai

\*\* Associate Professor, Durgadevi Saraf Institute of Management Studies, Mumbai

This article commences with an overview of financial statement analysis employing extant literature and focuses on trends in financial statement analysis. It offers a broad perception of business success based on historical data. The Income Statement, Balance Sheet, and Cash Flow Statement are the three key items that make up historical financial statements and assists us to learn about a company's success in the marketplace. This study also provides us with information on the ratio analysis of the company to determine whether they have adequate working capital, the ability to pay off debt, and their EBIDTA and net profit margins. To analyze a company's potential performance, we then forecast it's sales growth, EPS growth, and EBIDTA. In essence, we created a model that allows us to analyze any industry's historical performance from any company using the income statement, balance sheet, and cash flow statement.

The remainder of the article is organized as follows: a review of the literature, the goals of the study, the methodology, a discussion, and interpretation of the findings, and finally, a conclusion.

## LITERATURE REVIEW

To establish correlations between the items that are reported by the company in accordance with the accounting standards for reporting, financial analysis uses quantitative data from financial statements, including the income statement, balance sheet, and statement of cash flows. By doing this, the business can assess it's choices made over the course of the year in question or other time and identify its strengths, weaknesses, and organizational areas in need of improvement (Abraham, 2004; Bhargava, 2017; Schönbohm, 2013). Additionally, according to Mahajan and Yadav (2016), "they also provide hints on where the management might find more resources to boost its revenue."

**Table No. 1:** Extant Literature in Financial Analysis

Authors	Year	Country	Context	Key Findings
Abraham, A.	2004	Australia	Non-profit organizations	Developed a model for financial performance analysis for non-profit organizations.
Al-Jafari, M.K. & Al Samman, H.	2015	Oman	Industrial companies	Identified revenue growth, asset turnover, and financial leverage as the most important factors affecting profitability of industrial companies in Oman.
Allen, A.J., Shaik, S., Myles, A.E. and Yeboah, O.A.	2011	United States	Class railroads	Found that working capital management is positively associated with profitability of class I railroads in the United States.
Altman, E.I.	1968	United States	Corporate bankruptcy	Developed a financial ratio-based model for predicting corporate bankruptcy.
Ali, H.F. and Charbaji, A.	1994	International	Commercial airlines	Applied factor analysis to financial ratios of international commercial airlines to identify the most important factors affecting profitability.
Chen, Y.S., Chen, L.-H. and Liaw, S.-Y.	2001	Taiwan	Productivity	Found that financial factors are positively associated with productivity in Taiwan.

Authors	Year	Country	Context	Key Findings
Baños-Caballero, S., García-Teruel, P.J. and Martínez-Solano, P.	2012	Spain	Small & medium-sized enterprises (SMEs)	Found that working capital management is negatively associated with profitability of SMEs in Spain.
Bhargava, P.D.	2017	India	Information & technology industry	Conducted a financial analysis of the information and technology industry in India.
Bhunja, A., Mukhuti, S.S. and Roy, S.G.	2011	India	Case study	Conducted a financial performance analysis of a company in India.
Masimba Mbona and Kong Yusheng	2019	China	China telecoms industry	Applied principal component analysis to financial statements of Chinese telecoms companies to identify the most important factors affecting their financial performance.
Alex Borodin et al.	2022	Russia	Industrial enterprise	Proposed economic and mathematical models for conducting factor financial analysis of the prospects for the development of an industrial enterprise.
H. Kent Baker, Satish Kumar, Kirti Goyal, and Anuj Sharma	2021	United States	IRFA Journal	Conducted a bibliometric analysis of the IRFA journal to identify its key topics and contributors.
Shigeta Hena Uzma	2019	India	Business correspondent model of financial inclusion	Used financial Modeling to analyze the sustainability of the business correspondent model of financial inclusion in India.

*Source: Journal articles. Websites*

## RESEARCH OBJECTIVES

The research objectives of this study are two – fold: (a) To forecast the future financial performance of Indian oil companies and assess the profitability of Indian oil sector; (b) To identify opportunities for growth and expansion in the Indian oil sector.

## RESEARCH METHODOLOGY

This analytical research includes study and analysis of historical financial data which is available on stock screener, different articles, and websites etc. The combination of quantitative and qualitative data allows financial models to be more accurate and reliable. It is customary to use secondary data in Financial Modeling.

## DATA ANALYSIS AND DATA INTERPRETATION

*Historical Statement Analysis:* Historical financial statements are a record of a company's financial activities and position over a period. They provide information about the company's assets, liabilities, equity, income, expenses, and cash flows. Historical financial statements can be used to analyze a company's financial performance, identify trends, and make informed decisions about the company.

## Reliance Industries

**Figure No.1.** Income Statement of Reliance Industries

Historical Financial Statements - RELIANCE INDUSTRIES LTD											
Year	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	LMT
<b>Income Statement</b>											
Sales	₹ 4,33,521.00	₹ 3,74,372.00	₹ 2,72,583.00	₹ 3,03,954.00	₹ 3,90,823.00	₹ 5,68,337.00	₹ 5,96,679.00	₹ 4,66,307.00	₹ 6,98,672.00	₹ 8,79,468.00	₹ 8,79,468.00
Sales Growth	-	13.64%	27.19%	11.51%	28.58%	45.42%	4.99%	21.85%	49.83%	25.88%	0.00%
COGS	₹ 3,87,403.00	₹ 3,22,483.00	₹ 2,15,234.00	₹ 2,41,848.00	₹ 3,01,249.00	₹ 4,36,202.00	₹ 4,45,847.00	₹ 3,28,419.00	₹ 5,23,763.00	₹ 6,14,174.00	₹ 7,36,700.00
COGS % of Sales	89.36%	86.14%	78.96%	79.57%	77.08%	76.75%	74.72%	70.43%	74.97%	69.83%	0.00%
Gross Profit	₹ 46,118.00	₹ 51,889.00	₹ 57,349.00	₹ 62,106.00	₹ 89,574.00	₹ 1,32,135.00	₹ 1,50,832.00	₹ 1,37,888.00	₹ 1,74,909.00	₹ 2,65,294.00	₹ 1,42,768.00
Gross Profit % of Sales	10.64%	13.86%	21.04%	20.43%	22.92%	23.25%	25.28%	29.57%	25.03%	30.17%	16.23%
Selling and General Expenses	₹ 11,183.00	₹ 14,440.00	₹ 15,568.00	₹ 15,799.00	₹ 25,259.00	₹ 47,885.00	₹ 61,566.00	₹ 57,098.00	₹ 64,314.00	₹ 1,22,429.00	₹ 0.00
S&G Expenses % of Sales	2.58%	3.86%	5.71%	5.20%	6.46%	8.43%	10.32%	12.24%	9.21%	13.92%	0.00%
EBIDTA	₹ 34,935.00	₹ 37,449.00	₹ 41,781.00	₹ 46,307.00	₹ 64,315.00	₹ 84,250.00	₹ 89,266.00	₹ 80,790.00	₹ 1,10,595.00	₹ 1,42,865.00	₹ 1,42,768.00
EBIDTA Margins	8.06%	10.00%	15.33%	15.23%	16.46%	14.82%	14.96%	17.33%	15.83%	16.24%	16.23%
Year	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	LMT
Interest	₹ 3,836.00	₹ 3,316.00	₹ 3,691.00	₹ 3,849.00	₹ 8,052.00	₹ 16,495.00	₹ 22,027.00	₹ 21,189.00	₹ 14,584.00	₹ 19,571.00	₹ 19,571.00
Interest % of Sales	0.88%	0.89%	1.35%	1.27%	2.06%	2.90%	3.69%	4.54%	2.09%	2.23%	2.23%
Depereciation	₹ 11,201.00	₹ 11,547.00	₹ 11,565.00	₹ 11,646.00	₹ 16,706.00	₹ 20,934.00	₹ 22,203.00	₹ 26,572.00	₹ 29,797.00	₹ 40,319.00	₹ 40,319.00
Depereciation % of Sales	2.58%	3.08%	4.24%	3.83%	4.27%	3.68%	3.72%	5.70%	4.26%	4.58%	4.58%
Earning Before Tax	₹ 19,898.00	₹ 22,586.00	₹ 26,525.00	₹ 30,812.00	₹ 39,557.00	₹ 46,821.00	₹ 45,036.00	₹ 33,029.00	₹ 66,214.00	₹ 82,975.00	₹ 82,878.00
EBT % of Sales	4.59%	6.03%	9.73%	10.14%	10.12%	8.24%	7.55%	7.08%	9.48%	9.43%	9.42%

Tax	₹ 6,215.00	₹ 7,474.00	₹ 8,876.00	₹ 10,201.00	₹ 13,346.00	₹ 15,390.00	₹ 13,726.00	₹ 1,722.00	₹ 16,297.00	₹ 20,713.00	₹ 20,713.00
Effective Tax Rate	31.23%	33.09%	33.46%	33.11%	33.74%	32.87%	30.48%	5.21%	24.61%	24.96%	24.99%
Net Profit	₹ 13,683.00	₹ 15,112.00	₹ 17,649.00	₹ 20,611.00	₹ 26,211.00	₹ 31,431.00	₹ 31,310.00	₹ 31,307.00	₹ 49,917.00	₹ 62,262.00	₹ 62,165.00
Net Margin	3.16%	4.04%	6.47%	6.78%	6.71%	5.53%	5.25%	6.71%	7.14%	7.08%	7.07%
No. of Equity Shares	₹ 689.48	₹ 690.28	₹ 691.28	₹ 693.60	₹ 675.70	₹ 676.13	₹ 676.19	₹ 633.94	₹ 676.49	₹ 676.56	₹ 676.56
EPS	₹ 19.85	₹ 21.89	₹ 25.53	₹ 29.72	₹ 38.79	₹ 46.49	₹ 46.30	₹ 49.38	₹ 73.79	₹ 92.03	₹ 91.88
EPS Growth in %	-	10.32%	16.62%	16.39%	30.54%	19.84%	-0.39%	6.65%	49.41%	24.72%	-0.16%
Dividend Per Share	₹ 4.05	₹ 4.26	₹ 4.48	₹ 4.69	₹ 5.26	₹ 5.70	₹ 6.09	₹ 7.12	₹ 8.00	₹ 0.00	₹ 0.00
Dividend Payout Rate	20.41%	19.47%	17.54%	15.79%	13.56%	12.26%	13.16%	14.41%	10.84%	0.00%	0.00%
Retained Earnings	79.59%	80.53%	82.46%	84.21%	86.44%	87.74%	86.84%	85.59%	89.16%	100.00%	100.00%

Source: Researchers primary data

Reliance Industries' sales figures have exhibited a fluctuating trend over the given period, with a significant decline of 27.19% in sales during the fiscal year ending in March 2016. However, the company managed to rebound strongly in subsequent years, achieving a steady growth trajectory. Notably, RIL's sales experienced a remarkable surge of 49.83% in the fiscal year ending in March 2022, followed by a substantial 25.88% growth in the following year, indicating a robust performance.

Sales declining in 2016 of Reliance Industries calculation

$$\begin{aligned}
 &= \text{Final Value} - \text{initial value} / \text{Initial value} * 100 \\
 &= 2,72,583 \text{ Cr.} - 3,74,372 \text{ Cr.} / 3,74,372 \text{ Cr.} * 100 \\
 &= 27.19\%
 \end{aligned}$$

The cost of goods sold as a percentage of sales indicates the efficiency of RIL's operations. Despite a fluctuating sales trend, the company has consistently maintained its COGS as a percentage of sales at relatively manageable levels. This showcases RIL's ability to control its production costs. The gross profit margin, which indicates the proportion of revenue retained after accounting for production costs, has demonstrated an overall upward trajectory, culminating in a strong 30.17% gross profit margin in the fiscal year ending March 2023. This suggests that RIL has been successful in improving its operational efficiency and managing its cost structure effectively. RIL's selling and general expenses as a percentage of sales have exhibited a gradual increase, reaching a notable 13.92% in the fiscal year ending March 2023. This upward trend may indicate increased investment in marketing and administrative activities. It is worth noting that while the expenses have grown, they have been managed within

reasonable limits to ensure sustainable profitability. EBIDTA (Earnings Before Interest, Depreciation, Taxes, and Amortization) is a crucial indicator of operational performance. RIL's EBIDTA margins have shown resilience and consistency, remaining above 14% throughout the analyzed period. This suggests that the company has been effective in generating operational earnings, even during challenging market conditions. The marginal variations in EBIDTA margins reflect RIL's adaptability and ability to navigate market fluctuations. Reliance Industries' interest expenses as a percentage of sales have been relatively contained, indicating prudent management of debt and financing. The percentage of depreciation expenses to sales has remained relatively stable, with the company consistently allocating a moderate portion of its sales to cover depreciation costs. RIL's EBT margins have demonstrated a consistent upward trend, reaching 9.43% in the fiscal year ending March 2023. This signifies the company's ability to enhance profitability before accounting for taxes. The net profit margins, representing the proportion of revenue retained as profit after all expenses, have shown steady improvement, indicating RIL's ability to generate sustainable and increasing profits over the years. The effective tax rate, which indicates the proportion of income allocated to taxes, has shown a gradual decline, reaching 24.96% in the fiscal year ending March 2023. This suggests that RIL has managed to optimize its tax liabilities over time. Furthermore, the company's dividend payout rate has been controlled, demonstrating a strategic balance between returning value to shareholders and retaining earnings for future growth.

Reliance Industries' financial performance has significant implications for the Indian oil sector. The company's ability to maintain strong gross profit margins and manage costs efficiently showcases its competitiveness and robustness within the sector. RIL's consistent growth in net profit and dividends underscores its contribution to shareholder value and its role as a stable dividend-paying entity in the oil industry. The company's sustained EBIDTA margins highlight its operational resilience, which can positively influence investor confidence in the broader oil sector.

Research analyses that Reliance Industries' equity share capital has seen a gradual increase over the analyzed period, reaching ₹6,766.00 crore in the fiscal year ending March 2022. This suggests that the company has been raising additional capital through equity issuance, which can indicate its efforts to fund expansion and growth initiatives. The reserves of Reliance Industries have shown a consistent upward trend, more than doubling from ₹1,95,747.00 crore in March 2014 to ₹8,14,387.00 crore in March 2022. This significant growth indicates the company's ability to generate retained earnings, possibly driven by sustained profitability and prudent financial management. Reliance Industries' borrowings have experienced steady growth over the analyzed period, indicating the company's reliance on debt financing for its operations and expansion strategies. While borrowings have increased, careful monitoring of debt levels and interest costs remains crucial to maintain a healthy financial structure. Other liabilities, including provisions and trade payables, have consistently grown, reflecting the company's commitment to meeting its financial obligations. This growth could be influenced by increased business activities and investments. The net block of fixed assets represents the value of the company's long-term tangible assets. Reliance Industries has invested significantly in its fixed assets, as evidenced by the substantial increase from ₹1,41,417.00 crore in March 2014 to ₹8,99,786.00 crore in March 2022. This suggests considerable capital expenditure and

expansion efforts, possibly driven by investments in manufacturing facilities, infrastructure, and technology. The capital work in progress account reflects ongoing projects and investments that are not yet completed. Reliance Industries' substantial capital work in progress indicates ongoing expansion initiatives, with investments increasing from ₹91,494.00 crore in March 2014 to ₹1,17,259.00 crore in March 2022. These investments may include capacity expansions, modernization, and new ventures. Reliance Industries' investment portfolio has evolved significantly, with investments rising from ₹60,602.00 crore in March 2014 to ₹3,36,633.00 crore in March 2022. This suggests that the company has strategically allocated funds to investments, which could include stakes in subsidiaries, joint ventures, and financial instruments. The "Other Assets" category encompasses diverse assets such as intangibles, advances, and prepaid expenses. The growth of other assets from ₹31,215.00 crore in March 2014 to ₹1,16,661.00 crore in March 2022 indicates a broadening of Reliance Industries' asset base, possibly driven by advancements in technology and strategic initiatives. Reliance Industries' short-term assets have exhibited fluctuations. Notably, the company has managed to maintain substantial cash and bank balances, which can provide financial stability and flexibility. The increase in receivables and inventory suggests active business operations and growth.

Reliance Industries' balance sheet reflects the company's sustained efforts to expand its operations, invest in fixed assets and projects, and manage its financial obligations. The consistent growth of reserves and strategic investments highlights the company's financial strength and commitment to long-term value creation. However, it is essential for the company to continue managing its debt levels and ensuring efficient utilization of its assets to support sustainable growth and profitability.

### **Cash Flow Statement**

The cash flow statement of Reliance Industries highlights the company's financial activities over the reported periods. In terms of operating activities, the company generated consistent profits from operations, steadily increasing from ₹38,444.0 to ₹1,40,963.0 over the period. However, there were fluctuations in working capital changes, impacting cash flow. While receivables and inventory management improved, payables saw a mixed trend. Notably, the company faced varying direct tax expenses. The investing activities section reveals substantial capital expenditures on fixed assets, totaling ₹1,40,988.0 in the latest period. Investments were also made and divested, indicating strategic financial decisions. The significant purchase and sale of investments demonstrate the company's focus on optimizing its investment portfolio.

Financing activities involve capital infusion through share proceeds and borrowings, which supported the company's operations and growth initiatives. Repayment of borrowings and interest payments, while substantial, reflect the company's commitment to managing its debt obligations. A significant portion of dividends received and paid were also observed, indicating the company's dedication to shareholder value. The net cash flow, though fluctuating, showed an overall positive trend, with a notable increase in the latest period. The company seems to have managed its cash flows prudently, considering the substantial capital expenditures and



debt-related activities. The net positive cash flow suggests Reliance Industries has navigated through its operations, investments, and financing activities with resilience, aiming for sustainable growth. It is essential to continue monitoring the trends in working capital and debt management to ensure a robust financial position.

## Ratio Analysis

**Figure No. 2. Ratio Analysis of Reliance Industries**

Ratio Analysis - RELIANCE INDUSTRIES LTD													
Year	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Sparklines	Mean	Median
Sales Growth	-	-13.64%	-27.19%	11.51%	28.58%	45.42%	4.99%	-21.85%	49.83%	25.88%		11.50%	11.51%
EBITDA Growth	-	7.20%	11.57%	10.83%	38.89%	31.00%	5.95%	-9.50%	36.89%	29.18%		18.00%	11.57%
EBIT Growth	-	13.51%	17.44%	16.16%	28.38%	18.36%	-3.81%	-26.66%	100.47%	25.31%		21.02%	17.44%
Net Profit Growth	-	10.44%	16.79%	16.78%	27.17%	19.92%	-0.38%	-0.01%	59.44%	24.73%		19.43%	16.79%
Dividend Growth	-	5.25%	5.03%	4.80%	12.06%	8.34%	6.96%	16.79%	12.41%	-100.00%		-3.15%	6.96%
Gross Margin	10.64%	13.86%	21.04%	20.43%	22.92%	23.25%	25.28%	29.57%	25.03%	30.17%		22.22%	23.08%
EBITDA Margin	8.06%	10.00%	15.33%	15.23%	16.46%	14.82%	14.96%	17.33%	15.83%	16.24%		14.43%	15.28%
EBIT Margin	5.47%	6.92%	11.09%	11.40%	12.18%	11.14%	11.24%	11.63%	11.56%	11.66%		10.43%	11.32%
EBT Margin	4.59%	6.03%	9.73%	10.14%	10.12%	8.24%	7.55%	7.08%	9.48%	9.43%		8.24%	8.84%
Net Profit Margin	3.16%	4.04%	6.47%	6.78%	6.71%	5.53%	5.25%	6.71%	7.14%	7.08%		5.89%	6.59%
Sales Expenses % Sales	2.58%	3.86%	5.71%	5.20%	6.46%	8.43%	10.32%	12.24%	9.21%	13.92%		7.79%	7.44%
Depreciation % Sales	2.58%	3.08%	4.24%	3.83%	4.27%	3.68%	3.72%	5.70%	4.26%	4.58%		4.00%	4.04%
Operating Income % Sales	5.47%	6.92%	11.09%	11.40%	12.18%	11.14%	11.24%	11.63%	11.56%	11.66%		10.43%	11.32%
Return on Capital Employed	7.03%	6.70%	7.09%	7.20%	8.93%	9.11%	8.34%	5.54%	7.35%	8.87%		7.62%	7.28%
Retained Earnings %	79.59%	80.53%	82.46%	84.21%	86.44%	87.74%	86.84%	85.59%	89.16%	100.00%		86.26%	86.02%
Return on Equity %	6.89%	6.92%	7.62%	7.82%	8.93%	8.12%	6.97%	4.47%	6.40%	7.58%		7.17%	7.28%
Self Sustained Growth Rate	5.48%	5.57%	6.29%	6.58%	7.72%	7.12%	6.05%	3.83%	5.71%	7.58%		6.19%	6.17%
Interest Coverage Ratio	6.19x	7.81x	8.19x	9.01x	5.91x	3.84x	3.04x	2.56x	5.54x	5.24x		5.73x	5.73x
Debt Turnover Ratio	46.07x	70.44x	61.05x	37.17x	22.26x	18.89x	30.36x	24.52x	29.55x	30.91x		37.12x	30.63x
Creditor Turnover Ratio	4.74x	3.18x	1.58x	1.35x	1.41x	1.88x	1.66x	1.37x	1.75x	1.58x		2.05x	1.62x
Inventory Turnover	7.64x	7.03x	5.86x	6.21x	6.42x	8.41x	8.07x	5.71x	6.48x	6.28x		6.81x	6.45x
Fixed Asset Turnover	3.07x	2.39x	1.47x	1.53x	0.97x	1.43x	1.12x	0.86x	1.11x	0.98x		1.49x	1.27x
Capital Turnover Ratio	2.18x	1.71x	1.18x	1.15x	1.33x	1.47x	1.33x	0.67x	0.90x	1.07x		1.30x	1.25x
Debtor Days	8 Day	5 Day	6 Day	10 Day	16 Day	19 Day	12 Day	15 Day	12 Day	12 Day		12 Day	12 Day
Payable Days	77 Day	115 Day	231 Day	271 Day	260 Day	194 Day	219 Day	267 Day	209 Day	231 Day		207 Day	225 Day
Inventory Days	48 Day	52 Day	62 Day	59 Day	57 Day	43 Day	45 Day	64 Day	56 Day	58 Day		54 Day	57 Day
Cash Conversion Cycle (in days)	-21 Day	-58 Day	-163 Day	-202 Day	-186 Day	-132 Day	-162 Day	-188 Day	-140 Day	-161 Day		-141 Day	-162 Day
CFO/Sales	1.98%	-3.11%	1.23%	7.78%	5.07%	4.88%	5.22%	50.20%	5.33%	3.02%		8.16%	4.97%
CFO/Total Assets	2.00%	-2.31%	0.56%	3.34%	2.44%	2.78%	2.68%	17.73%	2.49%	1.55%		3.33%	2.46%
CFO/Total Debt	6.18%	-6.91%	1.72%	10.87%	8.26%	9.00%	8.76%	83.92%	11.67%	7.91%		14.14%	8.51%

*Source: Researchers primary data*

The presented Ratio Analysis for Reliance Industries Ltd. showcases key financial indicators, providing insights into the company's performance trends over the years. The Profitability ratios, such as Net Profit Margin and Return on Equity (ROE), depict the company's ability to generate profit and returns for shareholders. Liquidity ratios, including Current and Quick ratios, highlight the company's short-term liquidity and ability to meet obligations. Solvency ratios, like Debt-to-Equity and Interest Coverage ratios, reveal the company's leverage and financial stability. Efficiency ratios, exemplified by Inventory Turnover and Receivables Turnover ratios, indicate the company's management of resources. Market ratios, such as Price-to-Earnings and Price-to-Book ratios, reflect investor perceptions and valuation. The provided sparklines and averages depict trends, aiding in assessing the company's financial health and aiding decision-making. For instance, the ROE average of 11.51% signifies the return generated on shareholders' investment, and the Debt-to-Equity ratios ranging from 1.25x to 2.05x

highlight the company's financing structure. These ratios collectively offer a comprehensive overview, enabling stakeholders to gauge Reliance Industries' financial position, profitability, liquidity, leverage, and market valuation.

## Forecasting

Forecasting is the process of making predictions about future events, typically by analyzing historical data and trends. It is used in a variety of fields, including business, economics, and weather forecasting. Forecasting assumes that past events can be used to predict future events. This is not always accurate, as the future can be unpredictable. However, forecasting can be a useful tool for making informed decisions about the future. There are many different forecasting methods, each with its own advantages and disadvantages. The best method for a particular situation will depend on the data available, the desired level of accuracy, and the resources available. Forecasting is an important tool for businesses, governments, and individuals. It can be used to make decisions about production, inventory, marketing, and investment.

**Figure No. 3.** Forecasting of Reliance Industries

RELIANCE INDUSTRIES LTD - Sales forecasting				RELIANCE INDUSTRIES LTD - EBIDTA forecasting				RELIANCE INDUSTRIES LTD - EPS forecasting			
Year Weight	Years	Sales	Sales Growth	Year Weight	Years	Sales	Sales Growth	Year Weight	Years	Sales	Sales Growth
1	2012A	-	-	1	2012A	-	-	1	2012A	-	-
2	2013A	-	-	2	2013A	-	-	2	2013A	-	-
3	2014A	4,33,521.0	-	3	2014A	34,935.0	-	3	2014A	19.8	-
4	2015A	3,74,372.0	-13.64%	4	2015A	37,449.0	7.20%	4	2015A	21.9	10.32%
5	2016A	2,72,583.0	-27.19%	5	2016A	41,781.0	11.57%	5	2016A	25.5	16.62%
6	2017A	3,03,954.0	11.51%	6	2017A	46,307.0	10.83%	6	2017A	29.7	16.39%
7	2018A	3,90,823.0	28.58%	7	2018A	64,315.0	38.89%	7	2018A	38.8	30.54%
8	2019A	5,68,337.0	45.42%	8	2019A	84,250.0	31.00%	8	2019A	46.5	19.84%
9	2020A	5,96,679.0	4.99%	9	2020A	89,266.0	5.95%	9	2020A	46.3	-0.39%
10	2021A	4,66,307.0	-21.85%	10	2021A	80,790.0	-9.50%	10	2021A	49.4	6.65%
11	2022A	6,98,672.0	49.83%	11	2022A	1,10,595.0	36.89%	11	2022A	73.8	49.41%
12	2023A	8,79,468.0	25.88%	12	2023A	1,42,865.0	29.18%	12	2023A	92.0	24.72%
13	2024E	7,75,402.7	-11.83%	13	2024E	1,34,163.6	-6.09%	13	2024E	84.0	-8.69%
14	2025E	8,25,753.8	6.49%	14	2025E	1,45,237.8	8.25%	14	2025E	91.2	8.58%
15	2026E	8,76,104.9	6.10%	15	2026E	1,56,312.1	7.62%	15	2026E	98.5	7.90%
16	2027E	9,26,456.0	5.75%	16	2027E	1,67,386.3	7.08%	16	2027E	105.7	7.32%
17	2028E	9,76,807.1	5.43%	17	2028E	1,78,460.5	6.62%	17	2028E	112.9	6.82%

*Source: Researchers primary data*

The provided data represents the sales growth, EBIDTA (Earnings before Interest, Taxes, Depreciation, and Amortization) growth, and EPS (Earnings Per Share) growth forecasts for

Reliance Industries Ltd over the specified years. For Sales Growth, there is a mix of positive and negative growth rates over the years, with fluctuations in percentage. The sales growth shows a pattern of volatility, ranging from significant declines to substantial increases. For example, in 2016, there was a notable drop of -27.19%, while in 2017, there was a rebound with a growth of 11.51%. In the later years, the sales growth becomes more positive, with a notable surge of 49.83% in 2022. The projections for 2024 to 2028 show a mix of negative and growth rates, demonstrating potential uncertainties in future sales trends. Regarding EBIDTA Growth, there is a similar pattern of fluctuation, with both negative and growth rates. Notably, there is a substantial increase in 2022 with a growth of 36.89%, followed by a slight decrease in the following year. The projections for 2024 to 2028 also show fluctuations in EBIDTA growth, with both negative and positive rates. As for EPS Growth, there is a trend of growth rates over the years, with occasional dips. EPS growth demonstrates the company's ability to generate higher earnings for its shareholders. Notable increases in EPS growth are observed in 2017 (16.62%) and 2022 (49.41%). The projections for 2024 to 2028 show relatively moderate growth rates, with a dip in 2024 followed by a recovery and subsequent growth.

In terms of calculations, the growth rates are calculated using the formula:  $\text{Growth Rate} = \frac{\text{Current Year Value} - \text{Previous Year Value}}{\text{Previous Year Value}} \times 100$

Overall, the forecasting indicates a dynamic and evolving financial performance for Reliance Industries Ltd, influenced by various internal and external factors. It's important to interpret these forecasts in the context of the company's business strategies, industry trends, and market conditions to make informed investment decisions. The fluctuations in growth rates underscore the need for careful analysis and consideration of potential risks and opportunities.

## **PEER ANALYSIS AND KEY FINDINGS**

Based on the forecasting we can do peer analysis and assume that who have good profitability in future. Reliance Industries, Hindustan Petroleum (HPCL), Bharat Petroleum (BPCL), and Indian Oil Corporation (IOCL) are key players in the Indian oil sector. Analyzing their historical financial statements, ratio analysis, and forecasts provides insights into their growth potential. Reliance Industries, a conglomerate with diverse business segments including petrochemicals and telecommunications, has shown robust historical growth. Its extensive reach into various sectors enhances its growth prospects. HPCL, BPCL, and IOCL, being state-owned oil refining and marketing companies, have faced fluctuating growth due to market dynamics and government policies. BPCL and HPCL have demonstrated improved financials, potentially benefiting from reforms and efficiency initiatives.

Ratio analysis reveals that Reliance maintains strong liquidity and profitability, while BPCL and HPCL exhibit improved efficiency and leverage. IOCL's financials have been affected by external factors. Forecasting suggests Reliance will continue diverse growth. HPCL and BPCL are projected to maintain steady growth, aided by reform-driven efficiency gains. IOCL might face challenges in sales growth due to external factors.

From an investment perspective, Reliance's diversified portfolio and technological innovation

offer growth potential. BPCL and HPCL's efficiency initiatives enhance profitability, making them attractive. However, IOCL's growth might be relatively constrained. Factors like government policies, global oil prices, and market dynamics will influence growth prospects for each company. Investors should consider these factors along with their risk appetite and investment goals before making decisions.

## CONCLUSION

In this research paper we summarize the health analysis of the Indian oil sector and forecast some major parts of the company like sales growth in future as well EBIDTA. We are further developing this model and in future we propose adding the common size statement and DCF modeling and risk assessment also. The paper is unique in the sense that the financial model which has been developed can act as a template to assess the financial health of any company of any sector as well can help investors, analysts, and stakeholders to make better decisions about the concerned sector.

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# Electronic Bills Of Lading ( eBOL) In International Trade: Current Status and Future Outlook

Samir Sham Keskar\*

## ABSTRACT

This review article provides an overview of the current state of e-Bills of Lading (eBOLs) adoption and highlights key trends and developments in this field. It explores the evolution of traditional paper-based bills of lading to eBOLs which now have emerged as a digital alternative, offering numerous potential benefits to facilitate international trade and logistics. This review explores the advantages, challenges, adoption factors, legal considerations, and future prospects associated with eBOLs. By examining a range of scholarly articles, industry reports, case studies and other relevant information, this review aims to present a comprehensive analysis of the current state and future potential of electronic bills of lading.

**Keywords:** *e-Bills of Lading (eBOLs), International trade and logistics, Technical infrastructure, Digitalization*

## INTRODUCTION

In the domain of global trade, efficient movement of goods is imperative for successful transactions. The conventional paper-based bill of lading (BOL) holds a pivotal role in facilitating and recording cross-border goods transportation.

### *Definition of Paper-Based Bills of Lading*

A BOL is a legal document issued by a goods carrier, evidencing a carriage contract and goods receipt. It details transported goods, their condition, and agreement terms between shipper and carrier. A paper-based BOL is a tangible document, typically on paper, signed by shipper, carrier, and consignee, used when shipping goods internationally.

### *Purpose of Paper-Based Bills of Lading*

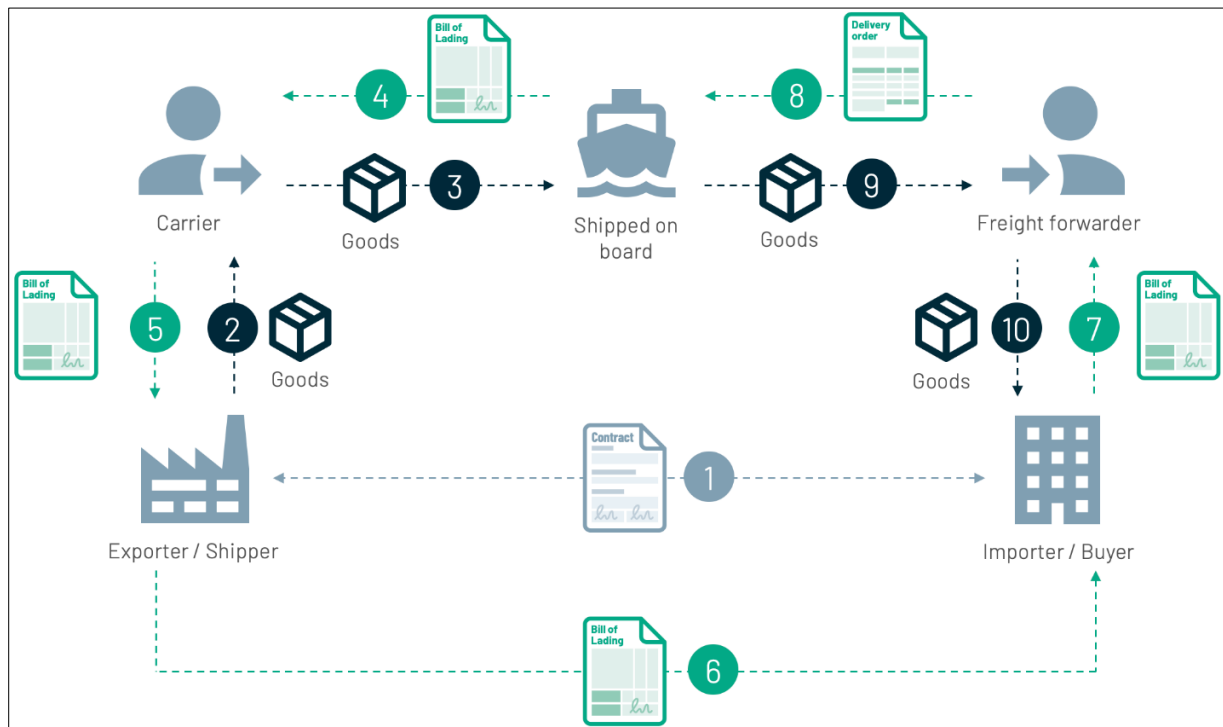
The functions and purpose of traditional paper based BOLs in global trade are summarized as follows.

- a) **Contract Evidence:** A paper-based BOL substantiates a carriage contract between shipper and carrier. It outlines terms such as shipment origin, destination, nature of goods, and each party's responsibilities.
- b) **Goods Receipt:** The BOL acts as proof of goods receipt by the carrier. It confirms quantity, condition, and packaging, aiding insurance claims and dispute resolution.
- c) **Title Document:** A BOL is a negotiable instrument. Ownership transfers via endorsement of BOL and subsequent delivery, allowing buyers to claim goods and ensure release of goods at the destination port.

\* *Research Scholar, Durgadevi Saraf Institute of Management Studies, Mumbai*

- d) Customs Clearance: Paper-based BOLs have vital customs data: goods description, value, origin, weight. Customs authorities verify cargo accuracy and ensure compliance.
- e) Risk Allocation: BOL specifies carrier and shipper duties, determining liability for loss, damage, or delay during transport, aiding dispute resolution.

**Figure 1:** Movement of bill of lading in a cross-border transaction



Source: Enigio AB, Drottningholmsv. 10, 5 tr, 112 42 Stockholm, SWEDEN, n.d.

### **Functions of Paper-Based Bills of Lading**

- a) Document Control: As physical documents, paper BOLs grant authorized parties control over goods. Original documents are needed for cargo release.
- b) Financial Instrument: Paper BOLs can secure financing like letters of credit or loans. They prove transaction legitimacy and goods value, facilitating trade finance.
- c) Compliance Proof: BOLs can show shipper compliance with regulations like hazardous materials handling. This helps ensure adherence to laws and regulations.

Despite trade digitalization, paper BOLs still play a vital role in global trade.

### **Limitations, Inefficiencies, and Risks of Paper-Based Processes**

Paper-based systems have been conventional in international trade but suffer from inefficiencies, delays, and risks. Manual handling leads to processing delays, increased errors, and lacks transparency.

- a) Delay and Inefficiency: Manual processing and document transit cause significant delays in trade operations. Errors in data entry further hamper efficiency.

- b) **Lack of Transparency:** Paper-based systems lack real-time visibility, leading to disputes, delays, and cost hikes. Absence of an audit trail invites fraud and forgery risks.
- c) **High Costs:** Printing, storage, and handling physical documents are costly. Manual data entry and verification increase costs, particularly affecting SMEs.
- d) **Compliance Risks:** Evolving regulations pose compliance challenges. Manual processing increases errors, non-compliance, penalties, and reputational damage.
- e) **Environmental Impact:** Paper-intensive processes harm the environment. Digitalization reduces paper use, waste, and carbon emissions. This issue is discussed in more detail below.

The paper-intensive nature of traditional trade processes contributes to deforestation, resource depletion, and carbon emissions. The widespread adoption of digital alternatives can help reduce the environmental footprint of international trade by minimizing paper usage and associated waste. Duval and Hardy (2021) consider four main channels through which paperless trade implementation affects greenhouse gas emissions:

- i. Elimination of physical documents, requiring Paper, Ink and Electricity for printer.
- ii. Reduced number of deliveries required to complete trade transactions. Elimination of physical delivery, and consequently fuel for courier transport, packing (e.g. envelopes)
- iii. Reduced productive hours required to complete procedures. This affects emissions associated with office activities (e.g. commute, office equipment operations, lighting, temperature control, etc.)
- iv. Reduced storage time for cargo, affecting emissions from temperature control, lighting, cargo handling etc.

### ***Digitalization and Automation of Trade Processes***

Digitalization and automation revolutionize international trade. Digitalization integrates technology into trade processes, transitioning from paper to electronic formats for efficient and secure document exchange. Automation involves making use of technology and algorithms to replace manual tasks. Customs, trade finance, and compliance processes can be streamlined. Trade Facilitation Platforms are online platforms that link traders, provide secure payments, contract management, allow consignment traceability, and ease of access to finance services, thereby reducing costs.

### ***Need for and Emergence of Electronic Bills of Lading (eBOLs)***

Traditional paper BOLs face challenges in efficiency and security. eBOLs emerged as digital alternatives, addressing these issues.

- a) **Efficiency and Cost Savings:** eBOLs reduce administrative burden, enabling faster documentation and cargo release, cutting costs.
- b) **Security and Fraud Prevention:** eBOLs offer encryption, digital signatures, and authenticity, preventing fraud and unauthorized alterations.
- c) **Sustainability:** eBOLs reduce paper usage, transportation, and storage, contributing to environmental sustainability.



Emergence of eBOLs has resulted from increasing legal recognition, technological advancements, and industry collaboration.

### ***Objectives and Scope of Literature Review***

This literature review aims to assess eBOL's status and future potential in global trade. It explores eBOL's evolution, advantages, limitations and challenges, adoption status, and future prospects. It provides insights for stakeholders to make informed decisions.

This review paper also contributes to the advancement of the following Sustainable Development Goals (SDGs)

SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation

SDG 13: Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy

SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development

## **ADVANTAGES OF ELECTRONIC BILLS OF LADING (EBOLS):**

### ***Reduction of paperwork and administrative costs***

The adoption of eBOLs eliminates the need for physical paper handling, reduces the risk of document loss or damage, and facilitates faster document transmission across borders. This tool not only expedites the cargo clearance process but also contributes to a greener environment by significantly reducing paper usage.

DCSA (2020) indicates the total cost of processing paper bills is almost three times that of eBLs. DCSA (2023, January) research forecasts that the industry can potentially save more than \$4 billion per year if 50% eBOL adoption is achieved.

### ***Enhanced accuracy in trade documentation***

One of the critical aspects in trade documentation is achieving enhanced accuracy, which directly influences the efficiency, reliability and compliance of global trade operations. The adoption of eBOLs offers a promising avenue for improving accuracy, reducing errors, and enhancing overall trade efficiency.

Traditionally, paper-based Bills of Lading (BoL) have been prone to errors, fraud, and physical mishandling, all of which can result in delays and disputes. eBOLs, on the other hand, offer numerous advantages. They are electronically generated, transmitted, and stored, reducing the likelihood of human transcription errors. This digital format enhances the accuracy of information.

### ***Increased processing efficiency and speed of transactions***

One of the key advantages offered by eBOL is the significant enhancement in processing efficiency and the acceleration of transaction speeds. Historically, the manual processing of paper-based bills of lading has been a time-consuming and error-prone procedure. The need for physical documents to be mailed, verified, and physically handled by various parties in the supply chain resulted in delays and inefficiencies. eBOLs streamline this process by digitizing the documentation, allowing for swift transmission and verification of information across the involved stakeholders.

Modifying details on a Traditional paper BOL is not an immediate process; it usually entails manual adjustments within a database followed by resending the revised information to the relevant stakeholder. Moreover, when adjustments are needed by shippers and consignees as shipments are nearing port arrival, this circumstance can lead to expensive disruptions or demurrage fees. With the utilization of an electronic Bill of Lading (eBOL), the transfer of goods' ownership and other documentary changes can occur within seconds, mitigating potential complications and hindrances throughout the supply chain.

### ***Improved transparency and traceability in supply chains***

Transparency and traceability have long been essential components of supply chain management, ensuring that goods' movement and transactions are accurately documented and monitored. Traditional paper-based bills of lading often posed challenges in this regard, as they were susceptible to loss, forgery, and delays in transmission, which could lead to information asymmetry and disruptions in the supply chain.

eBOLs, on the other hand, leverage digital technologies to enhance transparency and traceability. The inherent digital nature of eBOLs allows for secure sharing of relevant information among stakeholders involved in the trade transaction. By offering improved transparency and traceability, eBOLs empower stakeholders with real-time insights into the movement of goods, reducing inefficiencies, enhancing accountability, and contributing to smoother trade processes.

### ***Enhanced security and fraud prevention measures***

Ensuring the integrity, authenticity, and confidentiality of electronic trade documents is paramount to fostering trust among stakeholders and facilitating smooth cross-border trade. Electronic signatures, encryption techniques, and blockchain technology emerge as pivotal components in fortifying the security of eBOL systems. These mechanisms collectively serve to verify the identity of parties involved, protect the data from unauthorized access or alteration, and create an immutable audit trail of transaction history.

Digital signatures are difficult to forge or tamper with, thereby mitigating the risk of fraudulent activities. Blockchain technology, characterized by its decentralized and distributed ledger, is

increasingly being explored to bolster security in eBOL systems. Blockchain's transparency and immutability attributes provide a robust framework for preventing document alterations and fraudulent practices. The decentralized nature of blockchain ensures that no single entity can manipulate or compromise the integrity of the eBOL, enhancing trust among trading parties. Moreover, real-time data tracking and monitoring mechanisms have gained traction in the eBOL landscape as part of security-enhancing strategies.

### ***Environmental sustainability and carbon footprint reduction***

The adoption of Electronic Bills of Lading in international trade presents a pivotal opportunity to advance environmental sustainability goals and reduce the carbon footprint associated with paper-based shipping documentation. By replacing traditional paper-intensive processes with efficient and streamlined digital systems, eBOL has the potential to significantly curtail resource consumption (e.g. paper), energy usage, and consequently greenhouse gas emissions.

The implementation of eBOL eliminates the need for physical documents, thus decreasing paper consumption and the accompanying deforestation pressures. Furthermore, indirect emissions from logistics operations required for the physical movement of eBOLs and allied documentation is also eliminated.

A seminal study on reduction of greenhouse gas emissions by implementing cross-border paperless trade (Duval, Yann and Hardy, Simon; 2021), reveals the below mentioned trade documentation inputs that contribute to emissions:

- Paper
- Ink
- Electricity consumption by printers
- Excess hours of office environment maintenance using electricity
- Physical document delivery using conveyances that rely on fossil fuel
- Trade documentation storage facilities

This study concludes that most savings come from the reduction in office work needed to complete trade transactions. For the average trade transaction, 85 per cent of the estimated emissions savings are due to reductions in office work hours. Working in an office environment is associated with emissions from air-conditioning, lighting, electricity required to operate office equipment, petrol for employee commutes, garbage disposal etc.

The next most important input is the elimination of paper (accounting for 10 per cent of the estimated emissions savings)

A recent study (Jiang, Li, and Shen, 2021) highlights the significant ecological impact associated with the production of pulp and paper. The issue of severe environmental consequences stemming from this industry has gained paramount importance. Among the foremost environmental concerns of our time is deforestation, with trees being the primary source of the raw materials for paper production, accounting for 93% of raw materials used. A substantial 42% of the global wood harvest is allocated to paper manufacturing.

The study further notes that as part of its operations, the pulp and paper sector emits noxious gases like nitrogen dioxide, sulfur dioxide, and carbon dioxide into the atmosphere. These emissions play a role in various forms of pollution, including acid rain, as well as the release of greenhouse gases such as carbon dioxide, which are recognized drivers of climate change, particularly global warming. Furthermore, the industry discharges considerable amounts of wastewater, contributing to the contamination of water bodies. This discharge can lead to a decrease in oxygen levels within aquatic environments and adversely impact aquatic life.

Duval et al; 2021, report that the physical transport of documents accounts for 4 per cent of the estimated emissions savings.

Paper documents no longer need to be physically moved between internal trade participants, e.g., for a signature, or to be collected from or submitted to relevant agencies. Preparation and submission of paper documents often involve environmentally damaging transport, including by motorbike courier services. Physical document movement necessitates use of packaging material such as envelopes. By contrast, digital data exchange requires electricity for routers, networks, and servers with a comparatively minuscule carbon footprint.

The authors results indicate that “even with conservative assumptions, the emissions savings from paperless trade implementation can be very significant. At the global level, they are equivalent to planting at least a billion trees, driven especially by efficiency gains from handling data digitally”

## **CHALLENGES OF ELECTRONIC BILLS OF LADING (eBOLs)**

### ***Legal validity and enforceability issues***

The legal standing and enforceability of eBOLs present significant obstacles that impact their widespread acceptance in global trade transactions.

#### ***Legal Validity of eBOLs***

The legal efficacies of digital bills of lading are not fully tested under the law of contract. The eBOLs have not been regulated under the enforced International Sea Conventions, namely the Hague-Visby Rules and the Hamburg Rules (Plomaritou, E., & Jeropoulos, S., 2022). Rotterdam Rules 2009 however aims to bring legal modernisation, legal harmonisation and legal certainty in international carriage of goods by sea. The ecommerce practices have been recognised under the Rotterdam Rules but challenges in interpretation remain (C. J. C. Tseng, 2018, Dec).

A study (Schiltz, Q., 2019, Sep) concludes that MLETR (Model Law on Electronic Transferable Records) and the Rotterdam Rules support the digitalization of eBOL. However, both laws cannot be implemented without concern as there are still some barriers to overcome. First and foremost, MLETR is limited as a guideline to national legislatures. Secondly, the Rotterdam Rules have not yet been supported by enough countries to be ratified and adapted internationally.

Lind M., et al, 2021, note that an obstacle recognized by shipping firms is the absence of a comprehensive international legal framework. Almost every jurisdiction has its own set of rules.

Local regulations, along with uncertain legal areas where laws supporting the use of digital records are not clearly established, present difficulties for implementation. Since maritime shipping occurs on a global scale, the advantages can only be fully realized when all involved parties can legally acknowledge eBOLs and other digital paperwork.

The legitimacy of eBOLs hinges on their adherence to prevailing legal structures and conventions. The United Nations Commission on International Trade Law (UNCITRAL) Model Law on Electronic Transferable Records and the UNCITRAL Model Law on Electronic Commerce furnish pivotal guidelines for establishing the legal authenticity of digital documents like bills of lading.

Furthermore, regulations such as the Electronic Signatures in Global and National Commerce Act (ESIGN) in the United States and the Electronic Identification and Trust Services (eIDAS) Regulation in the European Union set benchmarks for electronic signatures and their acceptance. Adherence to these rules is pivotal in shaping the legal standing of eBOLs and their validation as dependable documents in international trade.

### *Enforceability Obstacles*

Despite strides in legal frameworks, challenges to the enforceability of eBOLs linger. A prominent challenge revolves around cross-jurisdictional recognition. With international trade involving entities governed by distinct legal systems, the harmonization of laws and regulations across borders is indispensable. Without universally accepted norms, disputes arising from eBOL usage can escalate into intricate dilemmas and impede swift resolution.

Another hurdle pertains to the weight of evidence. Traditional paper-based bills of lading boast historical precedence as primary proof of goods' acceptance and condition. The transition to eBOLs necessitates the establishment of an equivalent evidentiary value, mandating robust technological solutions to guarantee data integrity, validation, and secure transmission. The assurance against unauthorized access, tampering, or loss of electronic records is pivotal for preserving the trust of all stakeholders involved in the transaction.

While the legal landscape for eBOLs evolves positively with the reinforcement of international agreements and national regulations, challenges linked to cross-border acknowledgment, evidentiary weight, and data protection persist and are being tackled.

### *Standardization and interoperability concerns*

#### *Standardization*

In the context of eBOL systems, standardization entails establishing consistent formats, data elements, and communication protocols that facilitate uniform information exchange among diverse stakeholders in global trade. The absence of standardized formats can lead to confusion, data inaccuracies, and impede seamless data flow. Instituting industry-wide norms is pivotal to guarantee smooth interactions between distinct eBOL systems and participants, including shippers, carriers, banks, and customs authorities.

## *Interoperability*

Interoperability signifies the capacity of diverse eBOL systems to communicate, comprehend, and process data seamlessly. Achieving interoperability is vital to ensure that eBOLs can be exchanged and accepted across distinct platforms and jurisdictions. In the absence of proper interoperability, the potential gains from eBOL adoption could be undermined by fragmented systems and limited cross-system operability.

Numerous challenges obstruct interoperability within the eBOL landscape. These challenges comprise disparities in data formats, varying security protocols, and divergent legal and regulatory structures across nations. Addressing these hurdles necessitates harmonizing technical norms and cultivating collaboration among stakeholders.

### ***Technical infrastructure requirements and accessibility concerns***

#### *Technical Infrastructure Necessities*

Embracing eBOLs mandates a sturdy and standardized technical infrastructure to ensure secure, dependable, and interoperable transactions. Vital technical components encompass:

- a) **Digital Signatures and Encryption:** eBOL platforms must support sophisticated digital signatures and encryption methodologies to ensure the credibility and intactness of electronic documents. These technologies assure that data remains unaltered during transmission.
- b) **Blockchain Technology:** Blockchain can furnish a decentralized and immutable ledger, heightening trust and transparency in eBOL transactions. Its decentralized nature mitigates the risk of single-point failures and potential fraudulent activities, contributing to a more secure system.
- c) **Data Interoperability:** A proficient eBOL system should seamlessly share data between varied stakeholders, including shippers, carriers, and customs authorities. Norms like Electronic Data Interchange (EDI) and the utilization of APIs facilitate data exchange.
- d) **Cloud Infrastructure:** Cloud-based solutions provide scalability and accessibility. Leveraging cloud infrastructure ensures that eBOL services can accommodate varying workloads and remain accessible from diverse geographical locations.

#### *Accessibility Challenges*

Although eBOLs offer substantial benefits, they present several accessibility challenges that must be surmounted for broad adoption.

- a) **Digital Divide:** Not all regions and businesses possess equal access to advanced technological resources, obstructing the universal embrace of eBOL. Developing nations or smaller enterprises might lack the required infrastructure, including reliable internet connectivity and contemporary computing devices.
- b) **Interoperability Obstacles:** The coexistence of multiple eBOL platforms with distinct technical specifications can culminate in interoperability issues. Without standardized protocols, seamless communication across different systems becomes arduous.

- c) **Cybersecurity Apprehensions:** Since eBOL involves transmitting sensitive trade-related information through digital channels, ensuring cybersecurity is paramount. The risk of data breaches, hacking, and cyberattacks necessitates robust security measures.
- d) **Legal Acknowledgment:** The legal validity of eBOL is not uniformly recognized across all jurisdictions. Diverse regulations and legal frameworks regarding electronic signatures and document authenticity might hinder the cross-border acceptance of electronically generated documents.
- e) **Technological Obsolescence:** Swift technological advancements can render existing eBOL solutions obsolete over time. Regular updates and adaptability to emerging technologies are essential to sustain the efficiency and security of eBOL platforms.

In conclusion, the triumphant implementation of eBOLs in global trade necessitates a robust technical foundation incorporating digital signatures, blockchain, data interoperability, and cloud resources. However, challenges related to accessibility, interoperability, cybersecurity, legal recognition, and technological evolution must be effectively addressed to ensure the widespread adoption and seamless functioning of eBOL systems.

### ***Cybersecurity risks and data protection concerns***

The integration of eBOLs in global trade introduces significant cybersecurity risks and data protection concerns that require careful consideration and strategies for mitigation. The interconnected nature of eBOL systems exposes vulnerabilities that could be exploited by malicious entities. These risks involve unauthorized access, data breaches, identity theft, and denial-of-service attacks, which could disrupt trade and compromise sensitive data. Recent instances of cyber-attacks on digital trade platforms validate these concerns.

Data protection issues related to eBOLs primarily center around managing Personally Identifiable Information (PII) and trade-sensitive data. Stringent data protection measures are vital due to regulations like the EU's GDPR (General Data Protection Regulation). eBOL platforms often involve exchanging PII, including names, addresses, and financial details of trade stakeholders. Mishandling such data could lead to legal consequences and undermine trust in digital trade.

Blockchain-based eBOL systems' data immutability, while a security advantage, may present challenges. Rectifying inaccurate sensitive data may be complex due to blockchain's design. Ensuring accurate data from the start is crucial.

### ***Resistance to change***

The reluctance to adopt new technology is a common phenomenon during technological transitions. Organizations and individuals often hesitate to depart from established practices, even when presented with more efficient alternatives. In the context of eBOL adoption, this resistance can be attributed to various factors.

Firstly, the comfort associated with traditional paper-based systems can create psychological resistance against transitioning to digital solutions. People may be apprehensive about learning new processes and adapting to unfamiliar technologies.

Furthermore, concerns about data security and privacy play a pivotal role in resistance to eBOL adoption. Organizations, especially in the realm of international trade, handle sensitive and confidential information. The fear of data breaches, cyberattacks, or unauthorized access to electronic documents can hinder the willingness to embrace eBOL solutions. In a study (Plomaritou, E., & Jeropoulos, S., 2022) respondents had a negative perception of eBOLs owing to concerns of cyber risk, the ability of eBOLs to function as a document of title, the transferability problems, the ambiguity of the legal status of e-bills of lading in jurisdictions, the high investment cost, the long hours of training etc.

## **ADOPTION FACTORS AND INITIATIVES**

### ***Government initiatives and regulations promoting eBOLs***

By providing a clear legal framework and regulatory support, some governments and international organizations are facilitating the transition from traditional paper-based processes to more efficient and secure electronic trade documentation systems.

Various countries and international organizations have recognized the advantages of eBOLs and have taken steps to encourage their use and provide legal validity to these digital documents. Some examples are provided below.

**UNCITRAL's Model Law on Electronic Transferable Records:** The United Nations Commission on International Trade Law (UNCITRAL) has been at the forefront of developing a legal framework to facilitate the use of eBOLs. Their Model Law on Electronic Transferable Records (MLETR), adopted in 2017, provides guidance on the legal recognition of electronic transferable records, which includes bills of lading. This model law serves as a template for countries to align their national laws, recognizing the legal validity of eBOLs on par with traditional paper-based bills of lading (UNCITRAL Model Law on Electronic Transferable Records, 2017)

**European Union's eIDAS Regulation:** In the European Union, the Regulation (EU) No 910/2014 on electronic identification and trust services for electronic transactions in the internal market (eIDAS) has been a significant step towards promoting eBOLs. It establishes a legal framework for electronic signatures, electronic seals, electronic time stamps, and electronic delivery services, thereby enabling the secure and legally valid use of eBOLs (The European Parliament And The Council Of The European Union, 2014)

**Singapore's Electronic Transactions Act:** Singapore has been a pioneer in promoting electronic commerce, including the use of eBOLs. The country's Electronic Transactions Act provides a robust legal foundation for electronic records and digital signatures, creating an environment conducive to the use of eBOLs and other digital trade documents. (Electronic Transactions (Amendment) Act, 2021)



United States' Electronic Signatures in Global and National Commerce Act (ESIGN) and Uniform Electronic Transactions Act (UETA): In the United States, the ESIGN Act and UETA have been instrumental in promoting the legal validity of electronic contracts and records, including eBOLs. These acts ensure that electronic documents, including bills of lading, are not denied legal effect, validity, or enforceability solely because they are in electronic form. (Electronic Signatures in Global and National Commerce Act, 2000)

The Electronic Trade Documents Act 2023 (ETDA) of the UK, was enacted on 20 July 2023. UK law has traditionally not recognized eBOLs as having the same legal status as paper bills of lading. Under the law, trade documents should be physically held or “possessed”. Possession is only associated with tangible assets. The law did not recognize the possibility of possessing electronic documents. The Electronic Trade Documents Act (ETDA) provides for certain digital trade documents, such as eBOLs, to be put on the same legal footing as their paper counterparts. The new law, that comes into effect on September 20, 2023, supersedes a 141-year-old statute mandating the use of paper-based trade documents for legally transferring ownership of goods in import and export transactions (Jakomin, 2023).

For the electronic document to be considered equivalent to its paper counterpart, certain criteria need to be fulfilled (Meynell, 2023):

- a) Identifiability, to distinguish the original from its copies.
- b) Preservation of integrity and preventing unauthorized alterations, thus boosting trust in electronic trade document systems.
- c) Single-person control at any given time, with accountability for control.
- d) Uniquely linking the document to authorized individuals who can exercise control of the document.
- e) Complete transfer of control upon document transfer, preventing multiple transfers by the same or concurrent parties.

### ***Industry collaborations and standardization efforts***

Industry collaborations and standardization efforts are pivotal in propelling the adoption of eBOLs in international trade. They provide a foundation for interoperability, streamline processes, and offer a shared understanding of the complex legal and technical landscape. As the landscape of international trade continues to evolve, these collaborative endeavors will remain crucial in shaping the outlook of eBOL adoption.

Several international organizations and bodies are engaged in formulating eBOL standards. For instance, the Digital Standards Initiative (DSI) under the aegis of the International Chamber of Commerce (ICC), are actively involved in devising standard data definitions and message formats for eBOLs. This organization recently released a report on digital standards analysis and recommendations for eBOL, amongst other trade documents (International Chamber of Commerce, Digital Standards Initiative; 2023, March).

For the electronic exchange of Bills of Lading in containerized ocean shipping, the platform provider must be approved by the International Group of Protection & Indemnity (IGP&I). As of September 2022, there are seven approved platforms for the exchange of electronic Bills of Lading. For tracking and tracing cargo and vessel schedules, DCSA maintains a standard for the electronic Bill of Lading for container shipping (Digital Container Shipping Association, 2022, December). To achieve eBOL standardization, DCSA is collaborating with global trade stakeholders on several key areas. These include financial institutions (ICC, SWIFT, Banks, trade finance platforms), eBOL solution providers, regulatory bodies, customs authorities, customers, and standardization bodies (FIATA, BIMCO, UNECE, GS1). The goals include aligning DCSA eBOL standards with industry standards, promoting digital document transfer, ensuring interoperability between platforms, enhancing security standards for authentication, adopting MLETR (Model Law on Electronic Transferable Records) across jurisdictions, maintaining customs compliance, meeting customer needs, and achieving semantic and technical alignment across standardization bodies and fintech platforms.

Lind M., et al, 2021 recommend that financial institutions also need to collaborate. Currently, it's customary to require physical documents such as Bills of Lading for transactions involving Letters of Credit. Encouraging the necessary change in this practice could be driven by the Banking Standards Association and the International Chamber of Commerce (ICC).

The International Federation of Freight Forwarders Associations (FIATA) maintains a standard for the multi-modal electronic House Bill of Lading. BIMCO (The Baltic and International Maritime Council) now maintains a standard for the electronic Bill of Lading for wet and dry bulk shipping. Baltic and International Maritime Council (BIMCO) is the world's largest international shipping association, with over 2,000 members in more than 130 countries, representing over 60% of the world's tonnage. Its global membership includes shipowners, operators, managers, brokers and agents.

In today's age there is increasing instant collaboration within supply chain participants, and the utilization of cloud-based platforms for immediate data exchange. This has resulted in a pressing need for a more adaptable and compatible method of establishing uniform business semantics to facilitate seamless information sharing across supply chains. The creation of Reference Data Models (RDMs) by the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) sets the foundation for this necessary approach. A whitepaper published by United Nations (United Nations Centre for Trade Facilitation and Electronic Business, 2017) explains that the Reference Data Models provide “a consolidated list of standardized data and processes for use in a particular business domain, which are globally understandable and exchangeable between parties using common standard data exchange structures”.

### ***Trust, authenticity, and non-repudiation***

Central to the adoption of eBOL is the establishment of trust, authenticity, and non-repudiation in digital transactions.

### *Trust and Authenticity*

The successful implementation of eBOL hinges on building trust among the various stakeholders involved, including shippers, consignees, carriers, banks, and regulatory authorities. Establishing trust in eBOL involves addressing concerns regarding data integrity, tampering, and unauthorized access. One of the foundational technologies for achieving trust in eBOL is blockchain, a distributed and immutable ledger that ensures data authenticity and transparency. Blockchain's decentralized nature prevents a single point of failure, reducing the potential for fraudulent activities and unauthorized modifications to eBOL documents

### *Non-Repudiation*

Non-repudiation is a critical aspect of eBOL implementation, as it prevents parties from denying their involvement in a transaction. In the context of eBOL, non-repudiation ensures that once a party has digitally signed the electronic document, they cannot later disavow their authorization. This is achieved using cryptographic techniques, such as digital signatures, which provide a verifiable link between the signer and the signed content. Digital signatures ensure the integrity of the eBOL, enabling parties to prove their involvement in the transaction if disputes arise.

Recent advancements in cryptographic algorithms and secure key management systems have strengthened the non-repudiation aspect of eBOL. By utilizing public and private key pairs, signatories can digitally sign documents, and these signatures can be independently verified without revealing the private key itself. This technology ensures that the authenticity and origin of eBOL documents can be irrefutably established.

### ***Technological advancements and infrastructure supporting eBOL adoption***

Advancement of technologies like blockchain, the establishment of interoperable platforms, enhanced identity verification mechanisms, and the integration of AI in eBOL processes collectively drive the adoption of eBOLs in international trade.

One of the foundational technologies enabling eBOL adoption is blockchain as it ensures data integrity and transparency by providing a single, immutable source of truth that all relevant stakeholders can access. Digital trade platforms with interoperable systems facilitate the seamless exchange of electronic documents, including eBOLs, among various parties in the supply chain. Advancements in identity verification technologies contribute to the secure implementation of eBOLs. Biometric authentication and digital signatures enhance the verification of parties involved in trade transactions, reducing the risk of fraudulent activities. The evolution of data analytics and artificial intelligence (AI) also holds potential in optimizing eBOL processes-

### ***Cost-effectiveness and return on investment considerations***

A critical aspect influencing the decision to implement eBOL is the cost-effectiveness and return on investment (ROI) considerations associated with this transition. Published research underscores the potential for direct cost savings, operational efficiency improvements, and various tangible and intangible benefits. Traditional paper-based bills of lading entail expenses related to physical documentation, printing, courier services, and document storage. In contrast, eBOLs eliminate these expenses by digitizing document creation, transmission, and storage. Furthermore, eBOLs offer the potential to expedite customs clearance and reduce delays at ports, thus minimizing demurrage and detention charges.

### ***Case studies, success stories, best practices and lessons learned***

As various stakeholders within the global trade ecosystem seek to embrace eBOLs, several case studies, success stories, best practices, and lessons learned have emerged from the field.

In a press release issued by DCSA on 15 Feb, 2023, the members committed to a 100% adoption of eBOLs based on DCSA standards by 2030, moving away from the issuance and use of physical paper bills of lading (Digital Container Shipping Association, 2023, February). The 9 members of DCSA, a neutral, non-profit group founded by major ocean carriers to digitize and standardize the container shipping industry committed to converting 50% of paper bills of lading to digital within the next 5 years, and 100% by 2030 to accelerate the digitalization of container trade. The press release said, “Switching away from the transfer of physical paper bills of lading could save \$6.5 billion in direct costs for stakeholders, enable \$30-40 billion in annual global trade growth, transform the customer experience, and improve sustainability.”

The Future International Trade (FIT) Alliance was formed in February 2022 with five founding members: BIMCO (Baltic and International Maritime Council), DCSA (Digital Container Shipping Association), FIATA (International Federation of Freight Forwarders Associations), ICC (International Chamber of Commerce) and SWIFT (Society for Worldwide Interbank Financial Telecommunication). The key objectives of the FIT Alliance are to raise awareness and accelerate adoption of standards-based eBOLs across all sectors of the shipping industry i.e. a universal eBOL. To quote a successful Indian case study (Kumar, 2023), Tata Steel has achieved a groundbreaking milestone by completing its first-ever eBOL transaction using CargoDocs, a digital trade platform provided by essDOCS. This achievement involved the export of steel coils from India's Dhamra Port to Turkey's Port of Karadeniz Ereğli. The entire process, including drafting, reviewing, signing, issuing, endorsing, and surrendering the eBOL, was carried out within 48 hours using the secure online platform. This is in stark contrast to the days or weeks typically required for traditional paper-based transactions. This accomplishment aligns with Tata Steel's ongoing efforts to optimize shipping and trade processes through digital means, leading to time and cost savings, enhanced transparency, and a reduced risk of fraudulent documents.

In August 2023, Singapore and India commenced a new era of employing interoperable electronic Bills of Lading to back Trade Finance (The Ministry of Trade And Industry, Singapore et al., 2023). Initiated by Infocomm Media Development Authority (IMDA) in Singapore, 'TradeTrust' platform was created to tackle the obstacles of paper-based international trade. It utilizes global standards and frameworks while harnessing blockchain technology to facilitate the digitalization of trade documents. In a landmark case, TradeTrust enabled interoperable eBOLs backed Letter of Credit transactions between Singapore and Indian banks and companies, paving the way to digital cross-border trade. This is the shipment process executed through interoperable digital platforms:

- The exporting company Maptrusco ships scrap metal from Miami, USA to Gujarat, India.
- Maersk shipping company issues an eBOL to Maptrusco through the TradeTrust portal.
- Jindal Stainless applies for a Letter of Credit (L/C) from ICICI Bank.
- Maptrusco transfers eBOL ownership via TradeTrust portal, utilizing DBS as the Presenting Bank.
- DBS verifies and confirms documents as per L/C terms, including the TradeTrust eBOL. Then, DBS uses the 'SGTraDex' platform to transfer eBOL ownership to ICICI Bank.
- ICICI Bank receives eBOL and other trade documents, using 'TradeChain' powered by EdgeVerve to transfer eBOL ownership to Jindal Stainless.
- Jindal Stainless, an ICICI Bank customer, uses the TradeChain platform to surrender the eBOL to Maersk, completing the shipment.

Maersk issues an electronic Delivery Order (DO) for Jindal Stainless to collect the cargo at the port of discharge.

There has been a notable unsuccessful project as well (The Maritime Executive, 2022). A.P. Moller - Maersk and IBM have decided to end their TradeLens project, a blockchain-based global trade platform aimed at enhancing the efficiency and security of the global supply chain. The platform that offered eBOLs, was launched in 2018 as a collaboration between IBM and GTD Solution (a Maersk division). It was aimed to facilitate real-time data sharing among trading partners. Despite attracting over 300 members including carriers, terminals, and customs authorities, TradeLens faced challenges in industry-wide adoption due to competition concerns and lack of trust. The developers believed blockchain suited the shipping industry's complexity, yet analysts highlight the need for natural adoption. Maersk plans to pursue other solutions for supply chain digitization, while the TradeLens platform will be shut down by Q1 2023. The industry still values blockchain applications, with the Global Shipping Business Network being a key competitor. Rotem Hershko, Maersk Head of Business Platforms explained "Unfortunately, while we successfully developed a viable platform, the need for full global industry collaboration has not been achieved. As a result, TradeLens has not reached the level of commercial viability necessary to continue work and meet the financial expectations as an independent business."

## **FUTURE PROSPECTS AND OUTLOOK**

### ***Blockchain: eBOLs' Foundational Backbone***

The integration of advanced technologies, particularly blockchain, holds the potential to revolutionize the trajectory of eBOL and its influence on international trade.

A primary advantage of blockchain is heightened security and transparency, ensured by blockchain's cryptographic principles that render stored information tamper-proof and traceable. This minimizes risks of fraud and reduces the need for intermediaries to verify document authenticity.

Furthermore, blockchain's decentralized nature eliminates single points of failure found in centralized systems, enhancing the reliability and availability of eBOLs. A distributed network of nodes validates and maintains data integrity, bolstering the resilience of the eBOL process.

Efficiency gains are also significant. Smart contracts, self-executing code within the blockchain, can automate various eBOL steps, from issuance to ownership transfer, based on predefined conditions. This automation slashes time and resources for trade transactions, expediting port clearance and lessening administrative burdens.

Blockchain ensures a single source of truth, granting all trade transaction parties access to the same real-time information. This streamlines communication, reduces disputes, and accelerates dispute resolution through an immutable transaction history.

Based on a theoretical model and stakeholder analysis, a study (Loklindt, C., Moeller, M. P., & Kinra, A., 2018) advises a set of eight design principles for the successful implementation of blockchain based e-document exchange. These are (1) Immutability, (2) Decentralization, (3) Security, (4) Privacy, (5) Compatibility, (6) Scalability, (7) Inclusiveness and (8) Territoriality.

However, challenges like technical hurdles, blockchain platform interoperability, and standardization demand attention. Regulatory frameworks must evolve to recognize blockchain-based eBOL legality.

Despite challenges, ongoing research, collaboration, and regulatory evolution could pave the way for widespread adoption of blockchain-based eBOL systems.

### ***Future Trends, Innovations, and Research Directions in eBOL***

- a) **Blockchain and Smart Contracts:** Integrating blockchain and smart contracts into eBOL systems can enhance security and automate processes.
- b) **Increasing Collaboration to facilitate Interoperability and Standardization:** Achieving cross-platform compatibility and standardizing data formats is crucial for seamless eBOL exchange.
- c) **AI and Machine Learning:** Implementing AI in eBOL systems improves risk assessment and decision-making.
- d) **Increased adoption of eBOLs within Regulatory and Legal Frameworks:** Adapting regulations to recognize eBOL's legal validity across geographical jurisdictions is vital for broad adoption.

In conclusion, the future of eBOL hinges on technological advancement, standardization, AI, and regulatory adaptation. Through collaboration, eBOL can reshape global trade toward efficiency, security, and resilience.

## **DISCUSSION ON FINDINGS AND RECOMMENDATIONS**

### ***Summary***

Electronic Bills of Lading (eBOLs) offer a multitude of advantages that can transform international trade practices. These benefits include a significant reduction in paperwork and administrative costs, enhanced accuracy in trade documentation, increased processing efficiency, improved transparency and traceability in supply chains, augmented security measures, and notable environmental sustainability benefits.

However, alongside these advantages comes a set of challenges that must be addressed. These challenges encompass issues related to the legal validity and enforceability of eBOLs, concerns about standardization and interoperability, the requisite technical infrastructure, accessibility disparities, cybersecurity risks, data protection concerns, and resistance to adopting new technology.

The findings also highlight several crucial factors influencing the adoption of eBOLs in international trade. These factors include government initiatives and regulations, industry collaborations and standardization efforts, trust-building mechanisms like authenticity and non-repudiation, technological advancements, cost-effectiveness considerations, and real-world case studies. Additionally, the study outlines the outlook for eBOL adoption, emphasizing the pivotal role of blockchain and other emerging technologies.

### ***Implications***

The implications of these findings are substantial. For businesses involved in international trade, the adoption of eBOLs can lead to significant cost savings, increased efficiency, and improved sustainability. Furthermore, the reduced environmental impact aligns with global sustainability goals. However, the challenges underscore the need for international cooperation, legal harmonization, and robust cybersecurity measures to ensure the widespread acceptance and secure implementation of eBOLs.

- a) **Efficient International Trade:** The adoption of eBOLs can significantly enhance the efficiency of international trade by reducing paperwork, expediting processes, and minimizing errors and disputes.
- b) **Cost Savings:** eBOL adoption offers direct cost savings by eliminating expenses associated with physical documentation and courier services, making it a financially attractive option.
- c) **Security and Trust:** Technologies like blockchain and cryptographic techniques ensure the security and trustworthiness of eBOLs, addressing concerns related to data integrity and fraud. Digital signatures and identity verification mechanisms contribute to non-repudiation, making it difficult for parties to deny their involvement in a transaction.

- d) **Interoperability:** Collaboration and standardization efforts are critical for ensuring that eBOL systems can seamlessly interact with each other, enabling a smoother exchange of electronic documents. Several entities are now collaborating at an increased pace to address these concerns, and rapid progress is being made on interoperability of eBOL platforms.
- e) **Regulatory Adaptation:** Regulatory frameworks need to evolve to recognize the legal validity of eBOLs across different jurisdictions, providing a solid legal foundation for their use.
- f) **Case Studies and Lessons Learned:** Real-world case studies illustrate the potential benefits and challenges of eBOL adoption. Successful cases, like Tata Steel's use of CargoDocs, showcase time and cost savings, while unsuccessful projects, like TradeLens, highlight the importance of industry-wide collaboration and trust.

### ***Limitations***

It is crucial to acknowledge the limitations of these findings:

- a) **Dynamic Nature:** The landscape of eBOL adoption is rapidly evolving, and the study's findings are based on information available up to August 2023. New developments may have occurred since then.
- b) **Geographical Variations:** The adoption of eBOLs can vary significantly by global geography, and the study does not delve into specific regional differences in adoption rates and challenges.
- c) **Incomplete Picture:** The case studies provided offer insights into both successful and unsuccessful projects, but they may not capture the full spectrum of experiences in eBOL adoption.

### ***Recommendations***

Based on the findings, several recommendations for further studies, analyses and actions can be made:

- a) **Legal Harmonization:** Governments, international organizations (e.g., UNCITRAL), and trade law experts should encourage international efforts to harmonize legal frameworks. Clear guidelines for the recognition and enforcement of eBOLs in global trade are required.
- b) **Standardization:** Industry associations (e.g., International Chamber of Commerce, FIATA), and trade technology providers need to promote the development of industry-wide standards for eBOL formats, data elements, and communication protocols to ensure seamless information exchange among stakeholders.
- c) **Cybersecurity Measures:** Businesses, trade technology providers, and cybersecurity experts must invest resources in robust cybersecurity measures. Resilient data protection protocols need to be established to safeguard sensitive trade information, mitigate cyber risks, and build trust in eBOL systems.



- d) **Technical Infrastructure:** Governments, businesses, and telecommunications providers must ensure that entities involved in cross-border trade have access to the necessary technical infrastructure, including digital signatures, encryption, and cloud resources, to facilitate the secure and efficient use of eBOLs.
- e) **Awareness and Training:** Businesses, trade associations, and trade technology providers must address resistance to change through comprehensive training programs and awareness campaigns to help organizations and individuals transition to eBOLs confidently.
- f) **Research and Development:** Universities, research institutes, and trade technology providers must continue research into emerging technologies, such as blockchain, that can enhance the security and efficiency of eBOL systems and adapt to evolving technological landscapes.
- g) **Global Cooperation:** Governments, international organizations, and industry associations must facilitate the global acceptance of eBOLs and overcome cross-jurisdictional challenges.

## CONCLUSION

In the journey toward realizing the potential of eBOLs in transforming global trade, a delicate balance must be struck between innovation and addressing persistent challenges. While eBOLs promise substantial benefits, their legal validity, technical infrastructure, interoperability, accessibility, cybersecurity, and resistance to change present complex obstacles. These challenges demand interdisciplinary efforts from policymakers, practitioners, and researchers. By aligning legal frameworks across jurisdictions, fostering technological advancements, and prioritizing security, the potential of eBOLs to revolutionize international trade can be fully harnessed. As the landscape evolves, embracing eBOLs represents a step toward an efficient, secure, and sustainable future for the interconnected world of trade.

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## **Address by Session Chair**

### **Dr. Krupa Rai**

Session Chair Dr. Krupa Rai (Prof SIMSR and Ph.D guide as well an alumna of Global School in Empirical Research Methods, University of St. Gallen, Switzerland) delivered her insightful address, expert opinions and constructive suggestions to each of the authors. She discussed the future research directions in the field of business and management. She advised the researchers to study the theories and related literatures well, narrow down and deep dive to understand the objective, constructing the same research in a new context, location and culture and re-assessing and expanding theory, framework or model, one has addressed in his/her research.

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## Best Paper Presentation Award

On the basis of fair evaluation by a panel of session chairs and blind reviewers, three of the fourteen presenters had been chosen as the Best Paper Awardees.

**Dr. Sarika Jain** received the **first best paper** award for her research paper titled as- *Exploring the Role of CSR on Organizational Commitment and Job Satisfaction: A Study of Banking Sector*.

**Dr. Ravindra Dey** for his research paper titled as *Impact of Self-Efficacy, Resilience, Role Clarity and Autonomy on Employee Engagement* received the **second best paper** award.

**Ms. Riya Sodha and Ms. Pooja Goswami** for their research paper titled as *Understanding the Impact of Employee Well-Being on Employee Retention* received the **third best paper** award.

The Jury members awarded the certificates to the awardees and all the presenters. The best three papers mentioned above will be published in **Volume Five Issue Two** of **The Management Quest**, a Bi-Annual Research Journal of DSIMS, under the aegis of Remsons Centre for Management Research, with Online ISSN: 2581-6

## Concluding Note

A unique endeavor on the part of the Institute was to host a conference on the essence of India's G20 Presidency- '*One Earth, One Family, One Future – Transformation Strategy for Business Growth*'. The Conference was indeed a grand success.

## Institutions



Kudilal Govindram Seksaria  
**sarvodaya school**  
INSPIRE, INVENT, INITIATE



Kudilal Govindram Seksaria  
**english school**  
INSPIRE, INVENT, INITIATE



Ramniwas Bajaj  
**english high school**  
UNLEASH YOUR POTENTIAL



Mainadevi Bajaj  
**international school**  
GIVING WINGS TO YOUR DREAMS



Durgadevi Saraf  
**junior college**  
IN PURSUIT OF EXCELLENCE



Ghanshyamdas Saraf  
**college of arts & commerce**  
EDUCATION EMPOWERS



Kirandevi Saraf  
**institute of complete learning**  
WIDENING HORIZONS



Durgadevi Saraf  
**institute of management studies**  
WE CREATE LEADERS



Durgadevi Saraf  
**global business school**  
LEARN AND INSPIRE



Deviprasad Goenka  
**management college of media studies**  
INDIA'S PREMIER MEDIA SCHOOL



Ladhidevi Ramdhar Maheshwari  
**night college of commerce**  
ENLIGHTENING FUTURE



Ramdhar Maheshwari  
**career counseling centre**  
STEERING TO SUCCESS



Kunjibihari S. Goyal  
**online academy**  
LEARNING BEYOND BOUNDARIES



Draupadidevi Sanwormal  
**women's hostel**  
HEAVENLY DOMICILE



Pravinchandra D. Shah  
**sports academy**  
FITNESS REGIME



Vishwanath Podar  
**study centre**  
INTELLECTION HUB



Mainadevi Bajaj  
**international playschool**  
YOUNG EVOLVING MINDS



Jankidevi Bilasrai Bubna  
**boys hostel**  
A WISE HIVE



Nalini Shah  
**music academy**  
MUSICAL HARMONY



Rajasthani Sammelan  
**skill development centre**  
SCULPTING SKILLS

## Endowment Funds & Research Chair



Remsons Group  
**management research centre**  
MANAGEMENT RESEARCH



I R B  
**scholarship endowment fund**  
HONOURING EXCELLENCE



B K T  
**endowment freeship fund**  
FOSTERING KNOWLEDGE



Jankidevi Bilasrai Bubna  
**endowment freeship fund**  
EMBOLDENING STRENGTHS

## Facilities



Dhurmal Bajaj  
**bhavan**  
COMMUNITY PARADISE



Durgadevi Saraf  
**hall**  
TREASURING MEMORIES



Trivenidevi Deora  
**chikitsa sahayata kosh**  
HELPING TO HEAL



Ramnarayan Saraf  
**educational outlet**  
ONE STOP EDU-SHOP



Vijay Pal Singh  
**health centre**  
WEALTH OF WELLBEING



Kirandevi Saraf  
**library and reading room**  
WORLD OF KNOWLEDGE



Rajasthani Sammelan  
**I.T. hub**  
LINKING GLOBALLY



Rajasthani Sammelan  
**food court**  
FOOD FOR THOUGHT