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UNIVERSITY OF DELHI**



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STUDY ON PERSONALITY OF SECONDARY SCHOOL STUDENTS IN EAST KHASI HILLS DISTRICT OF MEGHALAYA

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ABSTRACT

The present study investigated the personality traits of secondary school students in the East Khasi Hills District of Meghalaya. The study aimed to examine the overall personality profile of students and compare personality dimensions with respect to gender, locality and type of school. A descriptive survey method was employed for the investigation. The sample consisted of 100 Class X students selected from government and private secondary schools located in rural and urban areas of the district through stratified random sampling technique. Data were collected using the Personality Traits Inventory (PTI) developed by Sen (1966). The tool measures six personality dimensions namely activity, enthusiasm, assertiveness, trusting nature, non-depressive tendency and emotional stability. The standardized tool possesses satisfactory reliability and validity and has been widely used in educational and psychological research.

The collected data were analysed using Mean, Standard Deviation and t-test to determine significant differences among groups. The findings revealed that the students generally possessed positive personality characteristics such as activity, enthusiasm, emotional stability, trusting nature and non-depressive tendencies. Statistical analysis indicated no significant differences between rural and urban students across personality dimensions. However, significant differences were observed in the assertiveness dimension with male students ($M = 12.00$) scoring higher than female students ($M = 6.00$). Similarly, government school students ($M = 11.08$) were found to be more assertive than private school students ($M = 9.01$). The study concludes that while most personality traits remain similar across groups, gender and institutional environment significantly influence assertiveness among secondary school students.

Keywords: *Personality traits; Secondary school students; Gender differences; East Khasi Hills District*



INTRODUCTION

Education plays a vital role in the holistic development of an individual. It not only aims at imparting knowledge and skills but also focuses on shaping attitudes, values, behaviour and personality. In the present era of rapid social, cultural and technological change, the development of a balanced and well-integrated personality among students has become an essential goal of education. Schools, especially at the secondary level, serve as a crucial platform where students experience significant physical, emotional, social and psychological changes that contribute to the formation of their personality.

Personality refers to the sum total of an individual's characteristics, traits, attitudes, habits and patterns of behaviour that make a person unique. It influences how individuals perceive themselves, interact with others, respond to challenges, and adapt to their environment. Psychologists view personality as a dynamic organization of psycho-physical systems that determine a person's characteristic behaviour and thought patterns. Since personality affects academic achievement, social relationships, emotional stability and future life adjustment, its study among school students holds great educational significance.

The secondary school stage is considered a critical period in personality development. During this stage, students undergo adolescence, a phase marked by rapid physical growth, emotional sensitivity, identity formation, and increased social awareness. Adolescents begin to develop self-concept, independence, moral reasoning and aspirations for the future. Their personality traits become more defined and stable during this period. Therefore, understanding the personality patterns of secondary school students can help educators, parents and policymakers to provide proper guidance, counselling and supportive learning environments.

In the Indian context, education aims at the all-round development of students, as emphasized in various educational policies and frameworks. Personality development has been recognized as an important component of quality education. Schools are expected to nurture positive traits such as self-confidence, emotional balance, leadership, cooperation, creativity and moral values among learners. However, the development of personality is influenced by multiple factors such as family background, school environment, peer relationships, socio-economic conditions, cultural practices and regional characteristics.



Meghalaya, one of the northeastern states of India, is known for its rich cultural heritage, ethnic diversity, and unique social structure. The East Khasi Hills district, in particular, has a distinct cultural identity shaped by the Khasi community, traditional values, matrilineal system, and strong community bonds. These socio-cultural factors play an important role in shaping the personality of students growing up in this region. At the same time, modernization, urbanization, exposure to digital media, and changing educational demands have brought new challenges and opportunities for adolescents in the district.

Secondary school students in East Khasi Hills district experience a blend of traditional cultural values and modern influences. While schools strive to provide academic knowledge, there is a growing need to understand the psychological and personality characteristics of students to support their overall development. Differences in personality traits among students may influence their learning styles, classroom behaviour, peer interaction, academic performance and emotional well-being. Hence, studying personality at this level becomes essential for effective teaching-learning processes.

Despite the importance of personality development, there is limited systematic research focusing on the personality of secondary school students in specific regional contexts such as East Khasi Hills district of Meghalaya. Most studies tend to focus on urban or mainland populations, leaving a gap in understanding the unique personality characteristics of students from northeastern regions. Conducting a study in this district will help in identifying the prevailing personality traits among secondary school students and understanding how regional, cultural and educational factors may influence their personality development.

REVIEW OF RELATED STUDY

Warji (2011) studied personality traits and achievement motivation among secondary school students belonging to matrilineal and patriarchal societies in the East Khasi Hills District of Meghalaya. The study included 536 Class IX students and found that Factor A recorded the highest percentage of students in the high-score category. Further analysis revealed that differences in personality factors such as A, C, E, G, I, Q, Q2, Q3 and Q4 between matrilineal and patriarchal societies were not statistically significant.



Komaraju et al. (2011) explored the relationship between the Big Five personality traits, learning styles, and academic achievement. The findings showed that conscientiousness and agreeableness were positively related to all four learning styles, whereas neuroticism was negatively related. Extraversion and openness were positively associated with elaborative processing. Moreover, the relationship between openness and GPA was mediated by reflective learning styles, suggesting that intellectual curiosity enhances academic performance when supported by effective learning strategies.

Gurjit (2011) examined value patterns of prospective secondary school teachers in relation to personality traits, cultural background, and academic stream. The study found that venturesomeness, assertiveness, and tension emerged as significant personality traits influencing value orientation. Values such as sociability, hedonism, aesthetics, religion, and health were significant in explaining the value structure of prospective teachers.

Laloo (2013) investigated personality patterns and educational aspirations of secondary school students in the East Khasi Hills District of Meghalaya. The findings revealed that 41.1% of students scored high in boldness, 76.4% showed average creativity levels, and 55.8% scored low in general ability. Significant gender differences were observed in several personality characteristics, including adaptability, competition, enthusiasm, leadership, morality, self-control, and social warmth at the 0.05 level, leading to the rejection of the null hypotheses for these variables.

Ibrahimoglu et al. (2013) studied the relationship between personality traits and learning styles among 421 undergraduate students at the University of Gaziantep. The results indicated a significant but weak association between learning styles and personality profiles, as confirmed by Cramer's V value ($V = 0.175, p < .05$).

Alkhelil (2016) examined the relationship between personality traits and career choice among secondary school students in Damascus. The study, involving 178 randomly selected students from five secondary schools, concluded that personality traits significantly influence students' choice of academic major and career, alongside cognitive ability.

Srivastava and Mishra (2016) studied the impact of Big Five personality traits on consciousness. The results showed that openness and conscientiousness were positively related to consciousness.



The study also revealed gender differences, with female students demonstrating higher levels of consciousness compared to male students.

Alghamdi et al. (2017) investigated personality traits as predictors of emotional intelligence among university teachers serving as student advisors. The findings revealed that extraversion, agreeableness, and openness significantly predicted emotional intelligence, while conscientiousness and neuroticism did not. No significant gender differences were observed in emotional intelligence.

Dupak and Tok (2017) conducted a study on personality traits of secondary school students in the Lower Dibang Valley District of Arunachal Pradesh. Using Cattell's Personality Trait Scale, the study found no significant differences in personality traits based on gender, locality, or tribal background. However, mean scores indicated that male, urban and non-tribal students exhibited slightly higher personality traits than their counterparts.

RESEARCH GAPS

Based on the above review of studies, it is evident that although personality has been widely examined in relation to achievement motivation, learning styles, values, emotional intelligence and career choice, several important gaps still remain. Most studies have focused either on higher education students or on regions outside Meghalaya, with only limited and dated research conducted specifically among secondary school students in the East Khasi Hills District. The findings related to gender differences and cultural contexts, such as matrilineal and patriarchal societies, are inconsistent and inconclusive, indicating the need for further systematic investigation. Moreover, many studies have examined personality in relation to specific variables rather than providing a comprehensive assessment of personality traits among secondary school students. There is also a lack of recent empirical evidence reflecting contemporary social and educational changes in the region. Therefore, there is a clear need for a focused and holistic study on the personality of secondary school students in the East Khasi Hills District of Meghalaya to address these gaps and provide updated, region-specific insights.



IMPORTANCE OF THE STUDY

Personality refers to the unique pattern of traits, attitudes, emotions and behaviours that distinguish one individual from another. The study of personality helps in understanding how society shapes and reinforces individual differences. In the present scenario, students often experience stress, frustration, insecurity and tension, which significantly affect their psychological well-being. School plays a crucial role in shaping and developing a child's personality, as a large part of life is spent in the school environment. Adolescence is a transitional phase from childhood to adulthood, and proper guidance during this period is essential for healthy personality development. Personality is influenced by hereditary, environmental and social factors, all of which interact continuously.

Understanding personality traits among secondary school students is essential for teachers, parents, counsellors and guidance workers. Although several studies have been conducted on personality patterns, limited research has focused specifically on the personality traits of secondary school students in this region. The findings of this study will help in diagnosing behavioural problems, planning guidance and counselling programmes and supporting adolescents in developing balanced personalities. Since the future of society depends on its youth, identifying and nurturing positive personality traits is of great educational and social significance.

STATEMENT OF THE PROBLEM

The problem of the present study is stated as: **“A Study on Personality of Secondary School Students in East Khasi Hills District of Meghalaya.”**

OBJECTIVES OF THE STUDY

The objectives of the present study are:

- i. To study the overall personality of secondary school students in the East Khasi Hills District of Meghalaya.
- ii. To compare the personality dimensions of male and female secondary school students in the East Khasi Hills District of Meghalaya.



- iii. To compare the personality dimensions of rural and urban secondary school students in the East Khasi Hills District of Meghalaya.
- iv. To compare the personality dimensions of government and private secondary school students in the East Khasi Hills District of Meghalaya.

HYPOTHESES OF THE STUDY

In the light of the stated objectives, the following null hypotheses were formulated:

- H₀₁:** There is no significant difference between the personality dimensions of male and female secondary school students in the East Khasi Hills District of Meghalaya.
- H₀₂:** There is no significant difference between the personality dimensions of rural and urban secondary school students in the East Khasi Hills District of Meghalaya.
- H₀₃:** There is no significant difference between the personality dimensions of government and private secondary school students in the East Khasi Hills District of Meghalaya.

METHOD OF THE STUDY

The descriptive survey method is used in the study. It describes the current position of the research work. It involves interpretation, comparison, measurement, classification, evaluation and generalization. All these direct towards a proper understanding the solution of significant educational problem. The present study attempted to find personality of secondary school students in East Khasi Hills District of Meghalaya”. Keeping in view the nature of the study, the survey method was found to be more suitable.

POPULATION OF THE STUDY

All the students studying in class-X of the secondary schools of East Khasi Hills district from the population of the study.

SAMPLE OF THE STUDY

The sample is of small number of representative individuals from the population. The study was conducted on 100 class-X students by giving due representation to boys (50) & girls (50)



as well as rural and urban localities of the East Khasi Hills district. The schools were selected using stratified random sampling technique, and students were selected using simple random sampling technique. However all the students of the selected schools formed the sample of the present study?

SELECTION OF SCHOOLS AND FINAL SAMPLE

In 11 districts of Meghalaya only one district were considered for this present study. From East Khasi Hills district two stratified groups namely rural and urban schools were selected. After completion of stratification with respect to rural and urban schools, sample was selected randomly from the said stratified groups (rural and urban). The selected schools belong to the category of government as well as private schools which are affiliated to CBSE and controlled and supervised by the Department of Education, Govt. of Meghalaya .The break-up of the final sample is shown table: 1

Table-1: Breakup of Sample of East Khasi Hills District

| East Khasi Hills, Meghalaya | | | |
|-----------------------------|-------|-------|-------|
| Schools | Urban | Rural | Total |
| N | 2 | 2 | 4 |
| Male | 25 | 25 | 50 |
| Female | 25 | 25 | 50 |
| Total | 50 | 50 | 100 |

TOOL USED

For the collection of data, the researcher used the Personality Traits Inventory (PTI) developed by Sen (1966). The inventory is a standardized psychological tool designed to assess important dimensions of personality among adolescents and school students. The tool consists of six dimensions namely Activity, Enthusiasm, Assertiveness, Trusting Nature, Non-Depressive Tendency and Emotional Stability.



The Personality Traits Inventory has been widely used in educational and psychological studies and possesses satisfactory psychometric properties. The reliability coefficient of the tool, as reported by the author, is sufficiently high for educational research purposes. The tool also demonstrates adequate content and construct validity, ensuring accurate assessment of personality traits among secondary school students.

The responses obtained through the inventory were scored according to the manual provided by the author. Higher scores in each dimension indicate stronger presence of the respective personality trait.

STATISTICAL TECHNIQUES USED

The collected data were analysed with the help of both descriptive and inferential statistical techniques. Mean and Standard Deviation (SD) were used to study the overall personality dimensions of secondary school students. The independent samples t-test was employed to examine the significance of differences between male and female students, rural and urban students, and government and private school students across various personality dimensions. The level of significance was tested at 0.05 level.

ANALYSIS AND INTERPRETATION OF DATA

The Analysis and interpretation of data is carried out objective and hypothesis wise.

Objective-1: To study the overall personality of secondary school students in East Khasi Hills District of Meghalaya.

Table 2: Mean and Standard Deviation of Personality Dimensions of Secondary School Students

| Dimension | Mean | SD | Personality |
|------------|-------|------|--------------|
| Part – i. | 14.45 | 4.69 | Activity |
| Part – ii. | 11.01 | 4.02 | Enthusiastic |



| | | | |
|-------------|-------|------|---------------------|
| Part – iii. | 12.00 | 4.30 | Assertive |
| Part – iv. | 13.36 | 4.55 | Trusting |
| Part – v. | 13.21 | 4.48 | Non-depressive |
| Part – vi. | 10.35 | 3.39 | Emotional-stability |

From the above table, it can be observed that the mean score for the personality dimension in Part (i) is 14.45. The findings indicate high levels of activity among the students. The students appear to be active, energetic, enthusiastic and engaged in regular and persistent activities. The analysis further reveals that they possess the ability to concentrate for longer durations of time.

In Part (ii), the mean score is 11.01, which suggests that the students possess enthusiastic personality characteristics. The findings indicate that they are satisfied with their work, warm-hearted in nature and enjoy social interaction with others. They also demonstrate courage and enthusiasm in performing their tasks and maintain open and friendly relationships with different groups of people.

In Part (iii), the mean score is 12.00, which reflects the assertiveness dimension of personality. The analysis reveals that the students tend to be straightforward in dealing with life situations, possess leadership qualities, show independence in decision-making and prefer to play active roles in various activities. The findings further suggest that they are confident and dominant in expressing their ideas and opinions.

In Part (iv), the mean score is 13.36, indicating a trusting nature among the students. The findings reveal that they are cooperative, willing to adjust with others and generally free from jealous tendencies. The students also appear open-minded, accepting of different situations and capable of recognizing their own weaknesses while maintaining faith in others.

In Part (v), the mean score is 13.21, which suggests a non-depressive tendency among the students. The analysis indicates that they are relaxed, emotionally composed and generally satisfied with their lives.



Lastly, in Part (vi), the mean score is 10.35, indicating emotional stability among the students. The findings suggest that they possess control over their emotional expressions, are adaptable in different situations and are capable of managing emotional problems effectively.

Objective 2: To compare the personality dimension between male and female secondary school students in East Khasi Hills District of Meghalaya.

Hypothesis 1: There is no significant difference between personality dimension of male and female secondary school students in East Khasi Hills Districts of Meghalaya.

Table 3: Comparison of Personality Dimensions between Male and Female Secondary School Students in East Khasi Hills District of Meghalaya (t-test Analysis)

| Sl.No | Personality Dimension | Male Mean | Male SD | Female Mean | Female SD | t-Value | Remarks |
|-------|--------------------------|-----------|---------|-------------|-----------|---------|-----------------|
| i | Activity | 12.21 | 3.98 | 11.48 | 3.39 | 0.99 | Not Significant |
| ii | Enthusiastic | 11.90 | 3.90 | 11.59 | 4.36 | 0.37 | Not Significant |
| iii | Assertive/ Submissive | 12.00 | 3.94 | 6.00 | 2.89 | 8.68 | Significant |
| iv | Trusting | 13.21 | 4.01 | 12.00 | 3.94 | 1.52 | Not Significant |
| v | Non-depressive | 11.86 | 3.88 | 12.48 | 3.68 | 0.82 | Not Significant |
| vi | Emotional Stability | 11.01 | 3.89 | 12.40 | 4.27 | 1.70 | Not Significant |

The above table presents the comparison of personality dimensions between male and female secondary school students in East Khasi Hills District of Meghalaya using the independent sample t-test.

The findings reveal that there is no significant difference between male and female students in the dimensions of Activity, Enthusiastic, Trusting, Non-depressive, and Emotional Stability, as the calculated t-values are lower than the table value of 1.98 at 0.05 level of significance. Hence, the



null hypothesis is accepted for these dimensions. This indicates that male and female students possess almost similar personality characteristics in these aspects.

However, a significant difference is observed in the Assertive/Submissive dimension, where the calculated t-value (8.68) is much higher than the table value (1.98). Therefore, the null hypothesis is rejected for this dimension. The mean score of male students (12.00) is considerably higher than that of female students (6.00), indicating that male students are more assertive in nature compared to female students.

This suggests that male students tend to express their opinions freely, show leadership qualities, maintain independence in decision-making, and exhibit confidence in social situations. In contrast, female students demonstrate comparatively submissive tendencies, such as hesitation in expressing personal opinions, dependence on others' views, and lower confidence in unfamiliar social interactions.

Overall, the study concludes that gender does not significantly influence most personality dimensions among secondary school students, except in the area of assertiveness where males exhibit stronger assertive traits than females.

Objective 3: To compare the personality dimension between rural and urban secondary school students in East Khasi Hills Districts of Meghalaya.

Hypotheses 2: There is no significant difference between personality dimension of rural and urban secondary school students in East Khasi Hills District of Meghalaya.

Table 4: Comparison of Personality Dimensions between Rural and Urban Secondary School Students in East Khasi Hills District of Meghalaya (t-test Analysis)

| Sl.No | Personality Dimension | Rural Mean | Rural SD | Urban Mean | Urban SD | t-value | Remarks |
|-------|-----------------------|------------|----------|------------|----------|---------|-----------------|
| i | Activity | 10.50 | 3.84 | 11.48 | 3.20 | 1.39 | Not Significant |
| ii | Enthusiastic | 11.00 | 4.36 | 12.00 | 4.06 | 1.19 | Not Significant |
| iii | Submissive | 8.84 | 4.01 | 7.98 | 3.19 | 1.19 | Not Significant |



| | | | | | | | |
|----|---------------------|-------|------|-------|------|------|-----------------|
| iv | Trusting | 12.00 | 4.58 | 11.00 | 4.56 | 1.09 | Not Significant |
| v | Non-depressive | 12.03 | 4.60 | 11.31 | 3.75 | 0.86 | Not Significant |
| vi | Emotional Stability | 11.48 | 4.49 | 11.89 | 4.78 | 0.44 | Not Significant |

The above table presents the comparison of personality dimensions between rural and urban secondary school students in East Khasi Hills District of Meghalaya using the independent sample t-test.

The analysis reveals that the calculated t-values for all six personality dimensions are lower than the table value of 1.98 at 0.05 level of significance. Therefore, no significant difference exists between rural and urban secondary school students with regard to Activity, Enthusiastic, Submissive, Trusting, Non-depressive, and Emotional Stability dimensions. Hence, the null hypothesis is accepted for all the personality dimensions.

The findings indicate that both rural and urban students possess almost similar personality characteristics. The environmental background, whether rural or urban, does not appear to exert a substantial influence on the personality dimensions of secondary school students in the study area. The mean scores further support this conclusion, as only minor variations are observed between rural and urban students across all personality dimensions. Rural students show slightly higher mean scores in Trusting and Non-depressive dimensions, whereas urban students display marginally higher scores in Activity, Enthusiastic nature, and Emotional Stability. However, these differences are statistically insignificant.

Overall, the study suggests that locality does not significantly affect the personality dimensions of secondary school students in East Khasi Hills District of Meghalaya. Both rural and urban students demonstrate comparable personality traits and behavioral tendencies.

Objective 4: To compare the personality dimension between government and private secondary school student's in East Khasi Hills District of Meghalaya.

Hypotheses 3: There is no significant difference between personality dimension of government and private secondary school students in East Khasi Hills District of Meghalaya.



Table 5: Comparison of Personality Dimensions between Government and Private Secondary School Students in East Khasi Hills District of Meghalaya (t-test Analysis)

| Sl. No | Personality Dimension | Govt. Mean | Govt. SD | Private Mean | Private SD | t-Value | Remarks |
|--------|-----------------------|------------|----------|--------------|------------|---------|-----------------|
| i | Activity | 11.88 | 3.98 | 11.39 | 3.78 | 0.63 | Not Significant |
| ii | Enthusiastic | 10.11 | 4.01 | 11.02 | 3.84 | 1.16 | Not Significant |
| iii | Assertive/ Submissive | 11.08 | 3.96 | 9.01 | 3.36 | 2.83 | Significant |
| iv | Trusting | 10.48 | 4.31 | 11.00 | 3.99 | 0.63 | Not Significant |
| v | Non-depressive | 12.45 | 4.32 | 12.20 | 4.01 | 0.30 | Not Significant |
| vi | Emotional Stability | 10.58 | 4.61 | 12.02 | 4.00 | 1.67 | Not Significant |

The above table presents the comparison of personality dimensions between government and private secondary school students in East Khasi Hills District of Meghalaya using the independent sample t-test.

The analysis indicates that the calculated t-values for Activity, Enthusiastic, Trusting, Non-depressive, and Emotional Stability dimensions are lower than the table value of 1.98 at 0.05 level of significance. Hence, no significant difference exists between government and private secondary school students in these personality dimensions. Therefore, the null hypothesis is accepted for these dimensions.

However, a significant difference is found in the Assertive/Submissive personality dimension. The calculated t-value (2.83) is greater than the table value (1.98), indicating a statistically significant difference between government and private school students in this aspect. Therefore, the null hypothesis is rejected for this dimension.

The mean score of government school students (11.08) is higher than that of private school students (9.01), suggesting that government school students tend to exhibit more assertive personality traits. They are comparatively more confident, independent in decision-making, capable of leadership, and open in expressing their opinions and views.



On the other hand, private school students display comparatively submissive personality tendencies. They are more likely to hesitate in expressing their ideas, avoid confrontation, and depend on others' opinions or directions in social situations.

Overall, the study concludes that government and private secondary school students do not differ significantly in most personality dimensions, except in the area of assertiveness where government school students demonstrate significantly stronger assertive traits than private school students.

FINDINGS OF THE STUDY

The present study was conducted to examine the personality dimensions of secondary school students in East Khasi Hills District of Meghalaya and to compare these dimensions on the basis of gender, locality and type of school. The major findings of the study are presented below:

- i. The study revealed that secondary school students possessed a high level of activity in their personality. The students were found to be energetic, active, hardworking, and capable of maintaining concentration in their daily activities.
- ii. The findings showed that the students demonstrated enthusiastic personality characteristics. They appeared warm-hearted, socially friendly, satisfied with their work, and actively involved in social interactions with others.
- iii. The students also showed assertive personality traits. They were found to be confident, independent in decision-making, and capable of expressing their opinions freely in different situations.
- iv. The study indicated that the students possessed trusting personality characteristics. They were cooperative, adjustable, open-minded, and capable of maintaining good relationships with others.
- v. The findings further revealed that the students exhibited non-depressive tendencies. They appeared emotionally relaxed, satisfied with life, and mentally composed.
- vi. The study also found that the students possessed emotional stability. They were able to control their emotions effectively, adapt to different situations, and manage emotional problems successfully.



Findings Related to Gender Differences

- vii. No significant difference was found between male and female secondary school students in the dimensions of Activity, Enthusiastic, Trusting, Non-depressive, and Emotional Stability.
- viii. A significant difference was observed between male and female students in the Assertive/Submissive personality dimension.
- ix. Male students were found to be more assertive than female students. They showed greater confidence, leadership qualities, independence in decision-making, and openness in expressing their opinions.
- x. Female students demonstrated comparatively more submissive tendencies in social and personal situations.

Findings Related to Rural and Urban Students

- xi. No significant difference was found between rural and urban secondary school students in any of the personality dimensions such as Activity, Enthusiastic, Submissive, Trusting, Non-depressive, and Emotional Stability.
- xii. The findings suggested that locality had no significant influence on the personality dimensions of secondary school students in East Khasi Hills District of Meghalaya.
- xiii. Both rural and urban students possessed almost similar personality characteristics and behavioral tendencies.

Findings Related to Government and Private School Students

- xiv. No significant difference was found between government and private secondary school students in the dimensions of Activity, Enthusiastic, Trusting, Non-depressive, and Emotional Stability.
- xv. A significant difference was observed between government and private school students in the Assertive/Submissive personality dimension.
- xvi. Government school students were found to be more assertive than private school students. They appeared more confident, independent, and expressive in social situations.
- xvii. Private school students showed comparatively submissive tendencies and were relatively less confident in expressing their views and opinions.



xviii. Overall, the study concluded that gender and type of school influenced the Assertive/Submissive dimension of personality, whereas locality did not significantly influence any personality dimension among secondary school students in East Khasi Hills District of Meghalaya.

DISCUSSION OF THE RESULTS

The present study was conducted to examine the personality dimensions of secondary school students in East Khasi Hills District of Meghalaya and to compare these dimensions on the basis of gender, locality, and type of school. The discussion of the findings has been presented in relation to the objectives of the study and supported by previous research findings.

The findings of the study revealed that the secondary school students possessed a high level of activity in their personality. The students were found to be energetic, hardworking, active, and capable of maintaining concentration in their daily activities. This finding is consistent with the study conducted by Warji (2011), who reported that students in East Khasi Hills District scored highly on Factor A of personality traits, indicating active and socially responsive behaviour. The finding may be attributed to the socio-cultural environment of Meghalaya, where students are often engaged in academic, social, and community-related activities that encourage active participation and responsibility.

The study further revealed that the students demonstrated enthusiastic personality characteristics. They appeared warm-hearted, socially friendly, and actively involved in social interactions. This result supports the findings of Laloo (2013), who found significant levels of enthusiasm and social warmth among secondary school students in East Khasi Hills District. Such personality characteristics may develop because of the cooperative social environment and close community relationships prevailing in the region



CONCLUSION

The present study was undertaken to examine the personality dimensions of secondary school students in East Khasi Hills District of Meghalaya and to compare these dimensions on the basis of gender, locality, and type of school. The study focused on six important personality dimensions namely Activity, Enthusiastic, Assertive/Submissive, Trusting, Non-depressive, and Emotional Stability.

The findings of the study revealed that secondary school students generally possessed positive personality characteristics. The students were found to be active, energetic, hardworking, socially friendly, emotionally stable, and mentally composed. They also demonstrated confidence, cooperation, and the ability to adjust themselves in different social situations. These personality traits indicate that the students are capable of maintaining healthy interpersonal relationships and adapting effectively to academic as well as social environments.

The study further revealed that gender did not significantly influence most of the personality dimensions such as Activity, Enthusiastic nature, Trusting, Non-depressive tendency, and Emotional Stability. However, a significant difference was found in the Assertive/Submissive dimension, where male students were comparatively more assertive than female students. This suggests that male students tend to express their opinions more confidently and independently in social situations.

With regard to locality, the findings indicated that there was no significant difference between rural and urban students in any of the personality dimensions. This shows that the environmental background of students does not substantially affect their personality characteristics in the study area. Both rural and urban students exhibited similar behavioural tendencies and personality traits. Similarly, the comparison between government and private school students showed no significant difference in most personality dimensions except Assertive/Submissive behaviour. Government school students were found to be more assertive than private school students. The findings suggest that the type of school has limited influence on the overall personality development of students, except in relation to assertiveness.

Overall, the study concludes that secondary school students in East Khasi Hills District of Meghalaya possess healthy and balanced personality characteristics. While gender and type of



school influence assertiveness to some extent, locality does not significantly affect personality dimensions. The study highlights the importance of providing supportive educational and social environments that encourage confidence, emotional stability, cooperation, and positive personality development among students.

EDUCATIONAL IMPLICATION OF THE STUDY

- i. **Importance of Personality Development Programmes:** The findings of the study highlight the need for schools to organize personality development programmes, leadership activities, group discussions, debates, and co-curricular activities to enhance students' confidence, assertiveness, emotional stability, and social interaction skills.
- ii. **Encouragement for Female Students:** Since female students were found to be comparatively more submissive than male students, teachers and parents should provide greater encouragement and opportunities for girls to participate in leadership roles, decision-making activities, and public speaking programmes in order to develop confidence and assertiveness.
- iii. **Role of Teachers in Emotional Development:** The study revealed that students generally possess emotional stability and non-depressive tendencies. Teachers should therefore continue to create a supportive and positive classroom environment that promotes emotional security, mental well-being, cooperation, and healthy interpersonal relationships among students.
- iv. **Equal Educational Opportunities for Rural and Urban Students:** As no significant difference was found between rural and urban students in personality dimensions, educational institutions should continue to provide equal learning opportunities, guidance services, and personality enrichment activities for students irrespective of their locality.
- v. **Need for Value-Based and Cooperative Learning:** The findings showed that students possessed trusting and cooperative personality characteristics. Schools should therefore promote value-based education, teamwork, social service activities, and collaborative



learning methods to strengthen qualities such as cooperation, adjustment, empathy, and mutual respect among students.

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FROM AWARENESS TO ADOPTION: WOMEN'S PERCEPTION AND BEHAVIOURAL INTENTION TOWARD HEALTH INSURANCE IN DELHI NCR

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ABSTRACT

Health insurance minimizes financial burden and access health care. However, women in India do not buy health insurance despite multiple policy initiatives by the government. Our study aims to examine the significance of awareness and perception on women's intentions to obtain health insurance in Delhi NCR. It also evaluates the significance of financial literacy and digital literacy.

The study uses primary data from a sample of 350 women from Delhi NCR collected through a questionnaire. The impact between the variables is tested by Partial Least Squares Structural Equation Modelling (PLS-SEM). It is found that awareness plays a significant role in affecting the perceived usefulness and trust. There is significant enhancement in awareness with increasing digital and financial literacy. Perceived usefulness and trust have a significant impact on the adoption intention.

The study suggests that improvement in awareness can lead to improvement in trust, which is required for the acceptance of insurance which is represented by women. It also provides insights for the consideration of insurance companies and governments

Keywords:- Health Insurance, Women. Awareness, Perception, Behavioural Intention.

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INTRODUCTION

Indian households face a huge burden from ever increasing healthcare expenses. This can cause financial stress and even economic hardship for many families as they continue to pay their bills for medical care from their income. One way to mitigate this burden is to have a health insurance plan that provides financial security and access to healthcare. However, health insurance access is not equal, especially for women (World Health Organization, 2023).

Women are likely to have extra constraints in accessing financial services. Their independent financial resources are less, incomes lower, and they are less likely to control household finances. Men make most financial decisions in many households, limiting women's involvement in insurance-related decisions (Sen & Östlin, 2008). Such challenges remain even in urban and semi-urban areas like Delhi NCR.

Among the major determinants of health insurance uptake, is awareness. Women's lack of awareness of policy benefits, premium, coverage, exclusions and claim processes reduce their chances of purchasing insurance. Perception also makes a difference: women who have a favourable attitude toward insurance and believe it is useful and trustworthy are more likely to be considering adopting. But the fear of rejection of claims, complex documentation, and lack of trust can hinder uptake (Devadasan et al., 2010; Verma & Kulshreshtha, 2025).

Financial literacy and digital literacy are also imperative. Women who are financial literate understand premiums, risk coverage and long-term benefits (Lusardi & Mitchell, 2014). Digital literacy helps them to find information, get a comparison of policies, and access insurance services online (OECD, 2020; GSMA, 2023). This study makes these factors together and studies the impact of awareness, financial literacy, digital literacy, perceived usefulness and trust on women intention to go with health insurance in Delhi NCR.

LITERATURE REVIEW

Almost everyone knows that health insurance is a key financial protection tool. It lowers out-of-pocket health expenditure and facilitates access to needed health care (Wagstaff & Lindelow, 2008; Leive & Xu, 2008). But there are disparities in enrolment rates between groups, particularly in the low- and middle-income countries (Spaan et al., 2012; Acharya et al., 2013).



Gendered social and economic conditions have always been a barrier for women to access insurance schemes (Kabeer, 2005; Grown et al., 2005).

Studies indicate a relationship between income, education and employment and women's access to insurance, and also to the decision making in the household. Women's wages may be lower and they might not own as much as men, nor have as much control over family expenditure. They are constrained in their use of financial services (Sen & Östlin, 2008; Duflo, 2012; World Bank, 2022). Women are not the ones to take decisions on the purchase of insurance or the choice of insurance in many households (Jejeebhoy & Sathar, 2001; Bloom et al., 2001).

Recognizing the need for insurance is often cited as a significant factor influencing insurance uptake. First the consumer needs to become aware of insurance and understand its benefits, restrictions and claims process (Davis, 1989). Although the Awareness of insurance is generally good in India but the knowledge of coverage, exclusions and claims is very less (Bhat & Jain, 2006; Patel et al., 2024; Reshmi et al., 2012). This lack of knowledge results in low levels of real adoption.

The insurance uptake is also influenced by perception. Medical emergencies or financial shocks resulting from health issues can make women more cognizant of insurance (Karan et al., 2017; Rao & Nair, 2024; Prinja et al., 2019). But awareness is not enough to ensure uptake – affordability, distrust, complex policy terms and household constraints remain barriers (Thornton et al., 2010).

The importance of trust as insurance is based on future benefits. Customers pay for premiums up now and will expect support down the road. Having a fear of claim rejection or unfair treatment, women may not avail health insurance, thus giving up opportunities for health care (Devadasan et al., 2010; Verma & Kulshreshtha, 2025). This is especially true for less experience women in the formal financial markets (Agarwal et al., 2009).

Financial knowledge enables people to evaluate financial products and comprehend risks and returns (Lusardi & Mitchell, 2014; Hastings et al., 2013). But information should be clear, practical and user relevant to the context (Sharma & Singh, 2023; Cole et al., 2011). Another reason for the importance of digital literacy is that insurance information and the option of buying insurance are becoming increasingly accessible via digital platforms (OECD, 2020;



GSMA, 2023). While digital services can contribute to financial inclusion, they can be less effective if access is not equal and the confidence towards using the services is low among women (MeitY, 2023; Rao, 2024; Singh & Arora, 2025).

In general, the literature suggests that a number of interrelated factors influence health insurance uptake such as awareness, trust, financial literacy, digital literacy and perceived usefulness. However, there is limited research on the interaction of these factors in the context of women in the Delhi NCR.

RESEARCH GAP

Awareness, trust, literacy and perception are frequently addressed in isolation from one another in existing studies. These factors cannot be explained comprehensively as to how they interact to shape women's uptake of health insurance (Morshed & Jha, 2020). However, there is also some research that is limited to women as a specific target group, despite the influence of their social roles, domestic power and unequal information access on their financial decision-making.

The other area in the Indian insurance context which has not been explored is digital literacy. The role of digital skills in women's insurance awareness and uptake is less understood despite the increase in access to digital. There is also a need to pay more attention to urban and semi-urban areas like the Delhi NCR, where there may be better access to services, but there continue to be behavioural barriers like distrust, limited understanding and lack of confidence. This study will tackle these gaps by creating a framework that takes into consideration financial literacy and digital literacy influencing awareness, perceived usefulness and trust, and how these can jointly impact the intention to use health insurance.

HYPOTHESES DEVELOPMENT

The Technology Acceptance Model will be used to explain the intention to use health insurance of the females in Delhi NCR. According to the model, the perception of usefulness and trustworthiness leads to product/service adoption (Davis, 1989; Bagozzi, 2007). Women are not always going to sign up for a health insurance policy just because it is available: they need



to be able to understand how it works, what benefits it provides, how claims are paid, and whether or not they can trust the insurance company.

It is expected that awareness will mediate the perceived usefulness and perceived trust. By being aware of the policy coverage, premiums, claim processes and policy exclusions, women are more likely to see health insurance as a valuable tool to lower medical expenses and protect family income. As a result, it can decrease the confusion and suspicion surrounding insurance companies, thereby enhancing trust in the claims process, which can have a positive effect (Devadasan et al., 2010; Verma & Kulshreshtha, 2025).

Expectations for awareness to be improved by financial literacy and digital literacy. Women who have better financial literacy can understand premiums, risk coverage, and long-term benefits better (Lusardi & Mitchell, 2014). Digital illiteracy can hinder women from accessing policy information, comparing policies and accessing information related to claims through online platforms (OECD, 2020; Rao, 2024).

Adoption intention is hypothesized to be driven by perceived usefulness and trust. When women feel that health insurance reduces costs and will help them get better health care, they will take it up more readily. Insurance is also based on the trust that the future claims will be settled. Awareness can also have a direct effect on intention to adopt as well because when women are aware, they are more likely to feel confident about buying a policy. Thus, the following hypotheses are made:

H₁: The Awareness of health insurance has a significant positive impact on perceived usefulness.

H₂: The Awareness of health insurance has a significant positive impact on perceived trust.

H₃: The Financial literacy has a significant positive impact on awareness of health insurance.

H₄: The Digital literacy has a significant positive impact on awareness of health insurance.

H₅: The Perceived usefulness has a significant positive impact on intention to adopt health insurance.

H₆: The Perceived trust has a significant positive impact on intention to adopt health insurance.

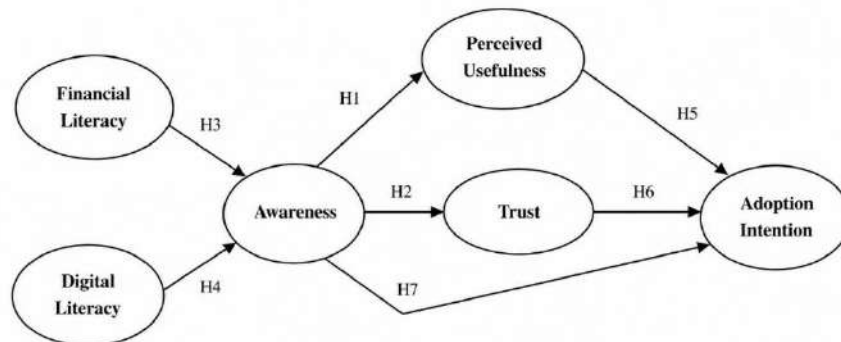
H7: The Awareness of health insurance has a significant positive impact on intention to adopt health insurance.

CONCEPTUAL FRAMEWORK

Conceptual framework discusses the various factors such as financial literacy, digital literacy, awareness, perceived usefulness, trust and behavioural intention of women to take up health insurance in Delhi NCR. Financial literacy and digital literacy are considered antecedent variables. Women with greater financial and digital literacy are more likely to seek out, understand and analyse insurance information.

Awareness is the main mediating construct. As awareness increases, perceived usefulness and trust is likely to increase. Perceived usefulness is women's evaluations of how useful health insurance is for reducing financial strain and increasing access to health care. Trust is a result of confidence in insurers, fairness and transparency of claims processes and reliability of service. According to the framework, the combination of perceived usefulness and trust has an influence on women's intention to get health insurance. Awareness can also have a direct impact on adoption by eliminating uncertainty and perceived risk. This model builds on the Technology Acceptance Model, adding financial and digital literacy as important elements of information access and awareness building (Davis, 1989; Lusardi & Mitchell, 2014; OECD, 2020). The model is given in Figure 1.

Figure 1: Conceptual Model





RESEARCH METHODOLOGY

The present study is a quantitative research design which is used to study the factors which influence the attitude of women towards taking up health insurance in Delhi NCR. The data were collected at one time, so a cross-sectional survey was used. Relationships between awareness, perceived usefulness, trust, financial literacy and digital literacy and adoption intention are focused in the research.

The data were collected by using a structured questionnaire with simple language. Items were drawn from existing scales related to health insurance (Oppenheim, 2000), financial literacy (Dillman et al., 2014), digital literacy (Churchill, 1979), trust (DeVellis, 2016). A pilot testing was done to identify ambiguous and unclear items, then made adjustments.

Women who were living in Delhi NCR were included in the sample. The method of convenience sampling was used because of time and access issues and an attempt was made to include women from all age, education, occupation and income levels. The scale used for all variables was five-point Likert scale which is frequently employed in behavioural research (Zikmund, 2003; Malhotra, 2019).

Awareness evaluated respondents' knowledge of insurance ideas, coverage, premiums and claims. Financial literacy included basic knowledge about how to use money and make financial choices (Atkinson & Messy, 2012; Remund, 2010). Digital literacy was defined as the ability to access financial information using the digital tools (Gilster, 1997; Buckingham, 2006). Perceived usefulness encompassed the idea that health insurance reduces financial strain and increases access to health care services (Bailey & Pearson, 1983; Ives et al., 1983). Insurer and claim processing confidence were reflected by trust (Mayer & Davis, 1999; Colquitt et al., 2007). The willingness to purchase or recommend health insurance was measured by intention to adopt (Zeithaml et al., 1996; Ajzen, 2001).

The data were analysed using SPSS and SmartPLS. The characteristics of the respondents were summarised with descriptive statistics. For testing the proposed relationships, Partial Least Squares Structural Equation Modelling was used, which is suitable for exploratory models having multiple latent variables (Hair et al., 2019). The reliability and validity were investigated using Cronbach's alpha, composite reliability, average variance extracted (AVE), Fornell-Larcker criterion and the HTMT ratio.



RESULTS

1. Demographic Profile

The demographic profile suggests that the sample was made up of women with a wide range of ages, education, occupation and income status. The largest proportion of respondents belonged to the 26–35 age group (36.6%), followed by 36–45 (24.0%), 18–25 (23.4%), and 45+ (16.0%). With regards to education, the majority of respondents were graduates (44.6%) with the majority being postgraduates (29.1%) followed by those who had school level education (18.3%) and others (8.0%). The majority of the people were in occupation (46.3%) with 31.4% being homemakers, 13.7% self-employed and 8.6% students. Regarding income, most respondents fell within the ₹20,000–₹50,000 range (40.6%), followed by less than ₹20,000 (27.4%), ₹50,000–₹1,00,000 (22.3%), and above ₹1,00,000 (9.7%). This diversity generates a good reason for studying women's health insurance uptake behaviour.

2. Descriptive Statistics

The descriptive statistics show moderate and positive responses in all constructs, with the highest means being shown in the constructs for adoption intention (3.55), digital literacy (3.65) and perceived usefulness (3.71). Given the ordinal nature of Likert-scale data, central tendency is reported using medians. Adoption intention, Digital literacy and perceived usefulness have the highest median composite scores (Mdn = 3.50, 3.60, 3.70 respectively). The average scores on the three scales of awareness, trust, and financial literacy are fairly low: 3.42, 3.28, and 3.18, respectively. The median scores for awareness (Mdn = 3.40), trust (Mdn = 3.25) and financial literacy (Mdn = 3.20) are comparatively lower. The standard deviations show a reasonable range of variation in the responses for all variables. The interquartile ranges (IQR) of all constructs were between 1.10 and 1.35, which gave an acceptable range of responses. Overall, the findings show that participants know about the advantages of health insurance and have some moderate level of digital competency, but a few issues of financial literacy and trust that might impact the use of health insurance.



3. Reliability and Validity

A coefficient of Cronbach's alpha, coefficient composite reliability (CR) and average variance extracted (AVE) were used to evaluate the reliability and convergent validity of the measurement model. All of the constructs are within recommended ranges.

The Cronbach alpha values are in the range of 0.80 to 0.88 (Awareness = 0.82, Financial literacy = 0.85, Digital literacy = 0.80, Perceived usefulness = 0.86, Trust = 0.83, Adoption Intention = 0.88), exceeding the 0.70 threshold (Nunnally & Bernstein, 1994) and this shows that they have a high level of internal consistency. The values of composite reliability ranged from 0.87 to 0.92, indicating more reliability. The AVE values range from 0.58 to 0.68 (Awareness = 0.59, Financial literacy = 0.64, Digital literacy = 0.58, Perceived Usefulness = 0.66, Trust = 0.62, Adoption Intention = 0.68), which are all above the threshold value of 0.50, indicating convergent validity (Hair et al., 2019). Overall, the results show that the measurement model has high reliability and validity to be analysed.

4. Discriminant Validity

Discriminant validity ensures that each construct is measuring a different concept not overlapping with other concepts. According to the Fornell - Larcker criterion, Awareness value is equal to 0.768, Financial Literacy value is equal to 0.800, Digital Literacy value is equal to 0.762, Perceived Usefulness value is equal to 0.812, Trust value is equal to 0.787 and Adoption value is equal to 0.825. The diagonal values are higher than all other inter-construct correlations below the diagonal, e.g., Awareness and Financial Literacy (0.62), Awareness and Perceived Usefulness (0.66) and Perceived Usefulness and Adoption (0.69). All other HTMT values are below 0.90, which further supports the constructs being distinct (Financial Literacy-Awareness 0.78, Perceived Usefulness-Awareness 0.82, Trust-Awareness 0.80, Adoption-Perceived Usefulness 0.85).

5. Correlation Analysis

The correlation matrix shows moderate positive relationship between the constructs (0.50 – 0.69), thereby there are no concerns about multicollinearity. The correlation between Awareness and Financial Literacy is 0.62, with Digital Literacy, 0.54, with Perceived



Usefulness, 0.66, with Trust, 0.63, and with Adoption, 0.58. The score of Financial Literacy is 0.59 with Digital Literacy, 0.61 with Perceived Usefulness, 0.57 with Trust, and 0.60 with Adoption. Digital Literacy has a correlation of 0.55 with Perceived Usefulness, 0.52 with Trust and 0.50 with Adoption. Perceived Usefulness has 0.64 with Trust and 0.69 with Adoption, while Trust correlates at 0.67 with Adoption. There are significant, meaningful and non-redundant connections expressed in these values.

6. Structural Model

The structural model investigates the direct relationships between the constructs and determines whether or not the hypothesized relationships are supported. Bootstrapping was employed due to the fact that it was not based on the normality assumptions and is able to estimate the significance of the path coefficients based on confidence intervals and resampling (Hair et al., 2019).

Table 1: Path Coefficients

| Hypothesis | Path | β | t-value | p-value | Result |
|------------|----------------------------------|---------|---------|---------|-----------|
| H1 | Awareness → Perceived Usefulness | 0.62 | 9.21 | <0.001 | Supported |
| H2 | Awareness → Trust | 0.58 | 8.45 | <0.001 | Supported |
| H3 | Financial Literacy → Awareness | 0.66 | 10.12 | <0.001 | Supported |
| H4 | Digital Literacy → Awareness | 0.41 | 6.87 | <0.001 | Supported |
| H5 | Perceived Usefulness → Adoption | 0.54 | 8.90 | <0.001 | Supported |
| H6 | Trust → Adoption | 0.49 | 7.75 | <0.001 | Supported |
| H7 | Awareness → Adoption | 0.32 | 5.66 | <0.001 | Supported |

Source: Author's analysis using primary data.

Financial literacy had the greatest impact on awareness, and digital literacy had a positive influence but was more subtle. Finally, the direct influence of awareness on adoption intention was mediated by perceived usefulness and trust, with these influencing levels significantly greater than the direct influence of awareness on adoption intention.



7. Model Explanation

Perceived Usefulness (0.39), Trust (0.34) and Adoption Intention (0.61). According to Hair et al., (2019) in behavioural research with PLS-SEM, the value of R^2 greater than 0.25 signify that there is a meaningful predictive ability, which means that the variance of the independent variables in the present study accounted for the variance in making decisions about women's health insurance.

8. Effect Size and Predictive Relevance

Effect sizes (f^2) show that financial literacy has a strong impact on awareness ($f^2=0.35$); digital literacy has a moderate impact ($f^2=0.15$); and awareness has a notable impact on perceived usefulness ($f^2=0.30$) and trust ($f^2=0.28$). Positive predictive relevance (Q^2) values of the model were found for awareness (0.42) and adoption (0.46), and this implies that the model was able to predict the value beyond the simple variance explanation (Hair et al., 2019). The metrics place financial literacy as the key enabler of awareness, and show that digital literacy has a supportive role, which reinforces the overall strength of the model.

9. Model Fit

Model fit statistics indicate that the proposed model fits the data well. The Standardized Root Mean Square Residual (SRMR=0.061) was below the value of 0.08 and the Normed Fit Index (NFI=0.91) was over 0.90 indicating the validity of the model in PLS-SEM context (Hair et al., 2019).

10. Mediation Analysis

Mediation was examined using Variance Accounted for (VAF) calculated as (indirect effect/total effect) \times 100, with 20-80% indicating partial mediation (Preacher & Hayes, 2008).

Table 2: Mediation Analysis

| Mediation Pathway | Total Effect | Indirect Effect | Direct Effect | VAF | Mediation Type |
|---|--------------|-----------------|---------------|------|----------------|
| Financial Literacy \rightarrow Awareness \rightarrow Usefulness | 0.594 | 0.412 | 0.182 | 69.4 | Partial |



| | | | | | |
|--|-------|-------|-------|------|----------------|
| Financial Literacy → Awareness → Trust | 0.600 | 0.381 | 0.219 | 63.5 | Partial |
| Awareness → Usefulness → Adoption | 0.869 | 0.335 | 0.320 | 38.6 | Partial |
| Awareness → Trust → Adoption | 0.812 | 0.284 | 0.320 | 34.9 | Partial |
| Financial Literacy → Awareness → Usefulness → Adoption | 0.594 | 0.223 | — | 37.5 | Serial Partial |

Note: *p < 0.05, **p < 0.01, ***p < 0.001 (two-tailed, 5,000 bootstraps)

Source: Author's analysis using primary data

According to the mediation results, the financial literacy–perceived usefulness relationship has a partial mediating role of awareness, and the financial literacy–trust relationship has a partial mediating role of awareness. Perceived usefulness and trust also partially mediate the relationship between awareness and adoption intention. This indicates that the adoption of health insurance is a multi-stage process of literacy, awareness, perception and trust (Shrout & Bolger, 2002; Kenny, 2018; Preacher & Hayes, 2008).

DISCUSSION

The results indicate that financial literacy has the highest positive influence on awareness ($\beta=0.66$); the financial literacy of women is influenced by their intention to take up health insurance which is in turn influenced by other interconnected factors. Women with high financial knowledge have better understanding of insurance benefits, premiums and mechanisms of risk protection, in line with existing literature showing financial knowledge contributes to better understanding of complicated financial products (Lusardi & Mitchell, 2014; Sharma & Singh, 2023). Digital literacy also contributes to awareness ($\beta=0.41$), albeit in a relatively small degree, suggesting that access to the digital world is not enough if the content is not easily accessible and trustworthy. This highlights the ongoing digital divide in which having access to technology does not necessarily mean that it is understood or used effectively (Rao, 2024). Perceived usefulness ($\beta=0.62$) and trust ($\beta=0.58$) are both significant mediators between awareness and the technology's actual use. Women with higher levels of



information see health insurance as a necessary barrier to cost and better access, and feel more confident in health insurance and processes that confirm findings from earlier studies that correlate information with reduced uncertainty (Bhat & Jain, 2006; Devadasan et al., 2010). Perceived usefulness and trust are strong predictors of intention to adopt ($\beta=0.54$ and 0.49), demonstrating that knowledge about the system needs to be perceived as useful and trustworthy, which are fundamental concepts of the Technology Acceptance Model (Davis, 1989). With the delayed insurance benefits, there are inherent risks that need to be mitigated, trust is crucial (Gennaioli et al., 2015). Direct effect on adoption ($\beta = 0.32$), weaker than indirect routes via usefulness and trust, shows that perceptions amplify the raw knowledge to an actionable intent to adopt

IMPLICATIONS

1. Theoretical Implications

The present study extends to the theory of health insurance adoption by contributing to the literature by analysing beyond a set of individual indicators, like income, education, and awareness. It illustrates the interaction between literacy, awareness, perception, trust and behavioural intention in shaping the adoption. The study builds on the Technology Acceptance Model by testing the effects of awareness on perceived usefulness and perceived trust, as well as the effects of financial and digital literacy on awareness (Davis, 1989; Lusardi & Mitchell, 2014).

The study also takes into account women as a separate behavioural group. Household roles, financial confidence, risk perception and trust are factors that affect women's choice of insurance. This resonates with the importance of gender-sensitive approaches to financial inclusion and health insurance uptake (Sen & Östlin, 2008; Kabeer, 2005).

2. Managerial Implications

The insurance companies should create awareness programs that explain insurance policies in a simple and practical manner. They must know what insurance means to their daily life and how it will help them in any medical emergency, save their family's money and alleviate financial stress.



Trust-building should be a key priority. Insurance companies need to make clear the process for making claims, keep documentation simple, and offer good customer service. Confidence can be reinforced by real-life case studies of successful settlements. Digital platforms should also be easy to use, multi-lingual, and simple. There should be step-by-step instructions for comparing policies, buying insurance and filing claims.

3. Policy Implications

The barriers to health insurance with respect to women should be tackled by policy interventions. The financial, informational and social constraints of women may not be fully reflected in the generic policies. There is therefore a need for the regulators and insurers to create gender-sensitive frameworks that align with how women access information and make decisions.

The enrolment, grievance and claim procedures should be streamlined. The digital literacy training and awareness raising activities are necessary to increase women's engagement in digital insurance services in communities. Public-private partnerships can contribute to the creation of mobile-friendly platforms, local-language information and basic financial literacy education.

LIMITATION AND FUTURE SCOPE

This study has certain limitations. Convenience sampling methods compromise representativeness, and women from lower socio-economic status or those with restricted mobility may be under-represented. This research is restricted to the Delhi NCR and therefore, the results may not apply to rural or less developed areas.

The cross-sectional design only provides information about responses at one point in time and does not show changes in awareness, trust, literacy or intention to adopt across time. The study also uses self-reported data that could have response bias. Future studies may go beyond urban areas and use longitudinal designs. Other factors like family decision making, social influence, previous claim experience, cultural norms and risk perception may be added as well. Qualitative interviews and focus groups can also offer a more in-depth understanding of women's beliefs, concerns, and decision-making.



CONCLUSION

The present study was an effort to look into the reasons that influence the intention of women to take up health insurance in Delhi NCR. The results highlight that the decision to adopt is not a simple one, but is influenced by financial literacy, digital literacy, awareness, perceived usefulness, and trust.

Financial Literacy helps women comprehend products offered by insurers and the significance of health insurance. They can find and compare insurance policies online using digital literacy. Awareness is connecting literacy and perception, enhancing perceived usefulness and trust. The strongest immediate predictor of adoption intention is perceived usefulness and trust.

The study finds that awareness is not enough. When women can clearly see the benefits of health insurance, and they believe that the insurance companies are doing a fair job, they are more likely to take up an insurance plan. Awareness campaigns, financial literacy programmes, digital support, transparent claim systems, and building trust can improve women's uptake of health insurance and boost financial protection.

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**JAINA TEMPLES IN RAJASTHAN (C.8TH – 15TH CENTURY):
ARCHITECTURE, PATRONAGE AND CULTURAL MILIEUS**

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ABSTRACT

This article re-examines Jaina temples in early medieval Rajasthan by bringing together architectural analysis, inscriptional evidence and the socio-economic contexts of their production. Rather than treating these temples either as isolated religious monuments or as purely stylistic developments, it argues for a more integrated reading in which architecture, patronage and cultural networks are understood as interdependent processes.

Between roughly the eighth and fifteenth centuries CE, Rajasthan witnessed the expansion of Jaina sacred architecture alongside the rise of influential merchant communities. The article suggests that temple construction should be understood not only as an expression of religious devotion but also as a structured mode of social and economic practice. Merchant patronage played a central role in converting wealth into enduring forms of cultural and religious visibility, particularly through temple building and inscriptional commemoration.

Architecturally, the development of the Maru-Gurjara style reflects the convergence of aesthetic refinement and sustained patronage networks. Its complex spatial organisation and detailed carving practices point to a close relationship between ritual requirements, artistic labour and material resources. At the same time, pilgrimage routes and artisan mobility contributed to the circulation of architectural forms across western India, embedding Rajasthan within wider regional networks.

By situating Jaina temples at the intersection of architecture, economy and inscriptional culture, this article offers a relational reading of sacred space in early medieval Rajasthan. It argues that these temples functioned as dynamic institutions through which religious meaning, social identity and economic power were continuously negotiated.



INTRODUCTION

The history of early medieval Rajasthan is often associated with the rise of Rajput political formations and the consolidation of their regional authority. While this political narrative is important, it tends to obscure equally significant developments in religious and economic aspects that were unfolding at the same time. Among these, the expansion of Jainism and the rapid growth of temple construction stand out as particularly important phenomena. Between roughly the eighth and fifteenth centuries CE, Rajasthan witnessed the gradual emergence of an extensive and interconnected network of Jaina temples, ranging from small shrines in emerging trade settlements to monumental temple complexes such as Mount Abu and Ranakpur.

While the term “early medieval” is conventionally used in Indian historiography for the period roughly up to the twelfth century CE, this article extends its chronological frame to the fifteenth century in order to capture the longer continuity of Jaina temple-building traditions in Rajasthan. This extension is not meant to collapse distinct historical phases but rather to highlight how architectural styles, patronage systems and mercantile networks developed gradually over time with significant regional continuity.

These temples were not isolated religious structures. They were deeply embedded in the social and economic fabric of the region, especially in the networks of trade and mercantile activity. Jaina merchant communities, who had become increasingly influential in western India, played a crucial role in shaping this architectural landscape. Their economic prosperity combined with the Jaina ethical framework that allowed lay participation in worldly life, created favourable conditions for large-scale religious patronage.

Earlier scholarship on Indian temple architecture, particularly that of Percy Brown and Stella Kramrisch, approached these structures primarily through stylistic and symbolic lenses. Although their work laid the foundation for the classification and formal description of these structures but they often treat these temples as aesthetic objects detached from the socio-economic contexts of their production. Kramrisch in particular, in *The Hindu Temple*, interprets temple architecture through a deeply metaphysical framework, viewing the temple as a cosmic structure embodying universal order. While this symbolic reading has been extremely influential, it tends to abstract the temple away from its historical conditions of production. The



material realities of patronage, labour organisation and mercantile wealth remain largely secondary in such interpretations.

In contrast, later scholars including, Julia A.B. Hegewald and John E. Cort, shifted the focus towards ritual space, religious ideology and community formation. Hegewald's architectural studies provide detailed spatial readings of Jaina temples, emphasising how movement and ritual shape architectural form. Cort, meanwhile, draws attention to Jaina ethical systems and community structures, particularly the integration of lay devotion and economic life. However, even these interventions often do not fully integrate the economic mechanisms through which such monumental architecture was made possible. While this marked an important advance, these interpretations still tend to privilege cultural and symbolic readings over the material conditions of patronage.

Recent contribution by Shalin Jain further expands the discussion by emphasising the role of pilgrimage networks, elite patronage and Jaina community identity formation in medieval India. His work is particularly valuable for highlighting how Jaina religious life operated through interconnected social and spatial networks. However, even here, the direct relationship between these networks and the architectural production of temple space remains unexplored.

This article builds on these strands of scholarship while attempting to bring them into closer dialogue. It argues that Jaina temples in early medieval Rajasthan must be understood as material expressions of a broader socio-economic order in which mercantile wealth, political negotiation and religious ideology were closely intertwined. Methodologically, it adopts a socio-historical approach that integrates architectural analysis with inscriptional evidence and historiographical debate, allowing for a more layered understanding of temple culture.

JAINISM, TRADE AND THE SOCIO-ECONOMIC LANDSCAPE

The expansion of Jainism in Rajasthan cannot be understood without reference to the broader economic transformations of early medieval western India. The region was a crucial part of long-distance trade routes connecting Gujarat, Malwa and Northern India. These routes facilitated not only the movement of goods but also the circulation of ideas, artistic practices and religious communities.



Within this commercial environment, Jaina merchant groups such as the Oswals, Porwals, Shrimalis emerged as influential actors. Their economic success was not merely incidental to religious development; it actively shaped the material conditions under which Jaina institutions flourished. Jainism, with its emphasis on ethical conduct, non-violence and the possibility of lay participation in religious life, provided an ideological framework that aligned well with mercantile values.

As John E. Cort has pointed out, Jaina lay practice allows a productive balance between worldly engagement and spiritual aspiration. Wealth, rather than being renounced outright, can be ritually transformed into religious merit through acts of donation and temple construction. In this sense, temple-building becomes a key mechanism through which economic surplus is converted into moral and social capital.

Politically, early medieval Rajasthan was characterised by fragmented authority structures with regional dynasties such as the Chauhans and Paramaras exercising fluctuating control over territories. In such a context, economic actors often played a mediating role between rulers and local communities. Jaina merchants because of their financial importance occupied a particularly influential position within these networks. Temple patronage thus emerged as a space where economic power, political legitimacy and religious aspiration intersected.

ARCHITECTURAL DEVELOPMENT AND THE MARU-GURJARA TRADITION

The architectural idiom commonly associated with Jaina temples in Rajasthan is the Maru-Gurjara style. This style developed gradually between the eleventh and thirteenth centuries and is characterised by a high degree of ornamental complexity, structural articulation and spatial refinement.

As M.A. Dhaky has argued, Maru-Gurjara architecture represents a synthesis of earlier Nagara traditions with regionally specific innovations. One of its most distinctive features is the articulation of exterior surfaces through deeply carved projections and recesses, creating a dynamic interplay of light and shadow. The sikhara or superstructure is often composed of multiple clustered spires, giving the temple a visually layered vertical profile.



However, it is the interior spaces that the architectural sophistication of these temples becomes apparent. At sites such as Mount Abu, particularly the Dilwara temples, the mandapas and ceilings are carved with extraordinary precision. The use of concentric geometric and floral motifs creates a sense of rhythmic expansion, drawing the devotee's gaze inward and upward.

Earlier interpretations especially those influenced by Stella Kramrisch, tend to emphasise the symbolic or cosmological dimensions of such architectural forms. While these interpretations are intellectually rich, they often abstract the temple from the socio-economic conditions of its production. The scale and refinement of these structures suggest not only devotional intent but also the availability of substantial patronage networks and highly skilled artisan communities.

It is therefore more appropriate to view Maru-Gurjara architecture as the outcome of a convergence between religious ideology and material resources. The temple becomes not only a symbolic space but also a material record of economic investment and social ambition.

It is also worth noting that the visual richness of these temples did not operate only at the level of elite appreciation. Even for ordinary devotees, the density of carving and the repetition of forms created a sense of immersion that did not require specialised knowledge to be meaningful. The temple could be experienced simply by moving through it, by looking, pausing and returning to certain spaces. In this way, architectural detail functioned at multiple levels, allowing both informed interpretation and more immediate forms of engagement. This layered accessibility may partly explain the enduring appeal of Jaina temple spaces in Rajasthan, where aesthetic experience and devotional practice remained closely intertwined without requiring a rigid separation between the two.

SPATIAL ORGANISATION AND RITUAL EXPERIENCE

Jaina temple architecture is carefully structured around a progression from exterior to interior space. The architectural sequence typically begins with an entrance porch leading into one or more mandapas, which function as gathering and ritual preparation spaces. These lead finally to the garbhagriha, the innermost sanctum where the image of the Tirthankara is installed.

This spatial progression is not merely functional but deeply experiential. The gradual reduction in scale, increasing complexity of ornamentation and controlled lighting conditions all



contribute to a heightened sense of transition from the mundane to the sacred. Ritual movement through the temple thus becomes an embodied experience of spiritual ascent.

Many temples also include subsidiary shrines (devikulikas), which expand the ritual universe of the complex. These allow for the simultaneous worship of multiple Tirthankaras, reflecting the pluralistic devotional practices within Jainism. The architectural inclusion of these elements suggests a flexible and inclusive approach to sacred space.

Ritual practices such as circumambulation are fully integrated into the architectural design. The movement of devotees around the sanctum reinforces the spatial logic of devotion, linking physical movement with spiritual progression.

PATRONAGE, INSCRIPTIONS AND SOCIAL MEANING

The question of patronage is central to understanding Jaina temple construction in Rajasthan. Unlike many major Brahmanical temple complexes, which were often associated with royal patronage, Jaina temples were predominantly funded by merchant elites and in some cases by high-ranking ministers.

This pattern of patronage is clearly reflected in inscriptional evidence. The inscription associated with Vimal Shah at Mount Abu (c.1031 CE), linked to the Vimal Vasahi temple, explicitly frames temple-building as an act of religious merit while simultaneously situating the patron within the political hierarchy of the Solanki court. This dual representation reveals the inseparability of religious devotion and social status.

Similarly, the Ranakpur inscription associated with Dharna Shah situates the construction of the temple within a broader network of pilgrimage, royal support and mercantile mobility under Rana Kumbha. The inscription not only records an act of donation but also embeds it within a larger cultural geography of movement and exchange.

At Osian, earlier, Jaina temples further demonstrate the integration of mercantile patronage with emerging trade networks. These examples collectively indicate that temple construction was not an isolated act of piety but part of a broader system of economic circulation and social negotiation.



Patronage, therefore, must be understood as a form of social expression in which wealth, religious identity and political positioning were simultaneously articulated.

An additional dimension of Jaina temple patronage in Rajasthan lies in its role in consolidating intergenerational social memory. Temple construction was often not an isolated act of individual piety but part of a broader familial strategy of cultural preservation and status assertion. Merchant families repeatedly invested in the same sacred centres across generations, ensuring that their names remained inscribed within the religious landscape long after their economic activities had diversified. In this sense, temples functioned as durable markers of lineage prestige, embedding mercantile identity within sacred geography. This process also contributed to the gradual institutionalisation of pilgrimage centres, as repeated acts of patronage transformed specific sites into enduring nodes of religious and economic significance.

It is also important to recognise that temple patronage was not always a straightforward reflection of economic capacity but could also respond to moments of uncertainty and change. Periods of political transition or shifts in regional power structures did not necessarily halt temple construction, in some cases, they appear to have encouraged it, investing in religious architecture may have provided a form of stability in an otherwise changing environment, allowing merchant groups to anchor themselves within a recognised sacred and social framework.

In such contexts, temple building could serve as a strategy for negotiating visibility and legitimacy. By associating themselves with established religious traditions and prominent sacred sites, patrons were able to situate their identities within a more durable cultural order. This suggests that religious patronage was not only an expression of prosperity but could also function as a response to instability offering a way to create continuity through material and ritual means.

This perspective also helps explain the sustained investment in temple sites over long periods, even when economic or political conditions may not have been entirely stable. Rather than being tied to a single moment of growth, temple patronage reflects a longer process in which communities sought to maintain presence, recognition and continuity within a shifting



historical landscape. The broader perspective also helps situate Jaina temples within the everyday social world of the period, where religious practice, economic life and community identity were closely interconnected rather than sharply separated.

CULTURAL MILIEUS AND SACRED NETWORKS

Jaina temples functioned as nodes within wider cultural and spatial networks. Over time, major temple sites evolved into pilgrimage centres, linking dispersed Jaina communities across regions. These networks facilitated not only religious movement but also the circulation of goods, ideas and artistic practices.

Temples also served intellectual and educational functions. Many housed manuscript collections and supported monastic scholarship, making them important centres of textual transmission. In addition, artisan mobility contributed to stylistic continuity across regions, resulting in a shared visual language that transcended local boundaries.

The cultural significance of these temples thus extended far beyond their immediate religious function. They were embedded in broader systems of communication and exchange that shaped the cultural geography of early medieval Rajasthan.

A further aspect that deserves attention is the relationship between permanence and change in Jaina temple traditions in Rajasthan. While these temples are often studied in terms of their original construction, their historical significance lies equally in their continued use and adaptation over time. Temple complexes were not static entities, they were repeatedly modified, repaired and expanded in response to shifting patterns of patronage and devotional practice. This ongoing engagement meant that the temple remained a living institution rather than a finished monument.

Such continuity also shaped the ways in which communities interacted with these spaces. Devotees did not encounter the temple as something newly constructed but as something already layered with the presence of earlier donors, inscriptions and ritual histories. In this sense, temple space accumulated meaning gradually, becoming richer through repeated acts of patronage and worship. The visibility of earlier inscriptions and architectural additions



reinforced this sense of continuity, allowing successive generations to situate themselves within an ongoing tradition.

At the same time, this process of accumulation did not prevent change. New patrons introduced additional structures, stylistic variations and inscriptions that reflected their own contexts and priorities. As a result, temple complexes often display a combination of continuity and variation, where older forms coexist with later interventions. This layered character is essential to understanding Jaina temple architecture in Rajasthan, as it highlights the dynamic relationship between stability and transformation.

Seen in this way, Jaina temples were not simply products of a single historical moment but evolving spaces shaped by long-term social, economic and religious processes. Their endurance reflects not only the strength of Jaina devotional traditions but also the ability of these institutions to remain meaningful across changing historical conditions.

SECTARIAN IDENTITY AND RELIGIOUS NEGOTIATION

Although Digambara and Svetambara traditions were already established as distinct sectarian formations by the early medieval period, their articulation in material and ritual contexts in Rajasthan does not always appear rigid or uniformly expressed. Both traditions possessed clearly differentiated doctrinal positions, monastic practices and textual canons; however, the archaeological and epigraphic record suggests that the lived religious landscape did not always map neatly onto later normative sectarian classifications.

In certain cases, temple iconography, patronage patterns and regional devotional practices reflect overlapping influences or locally specific adaptations rather than strictly uniform sectarian expression. This does not imply fluidity in the sense of blurred identities but rather indicates that sectarian boundaries were often mediated by regional contexts, patron networks and ritual pragmatism.

Temple patronage could therefore contribute to the consolidation of sectarian identity, particularly through the installation of specific images and the affiliation of shrines with particular monastic lineages. At the same time, these processes were gradual and context-dependent, shaped as much by local social conditions as by doctrinal distinctions. This suggests



that sectarian identity in early medieval Rajasthan should be understood as structured but regionally negotiated rather than entirely fixed in material practice.

CONCLUSION

Jaina temples in early medieval Rajasthan represent complex historical formations in which religious meaning, economic activity and social organisation are deeply intertwined. They were not merely architectural monuments but active institutions through which communities expressed identity, negotiated status and embedded themselves within broader networks of power and exchange.

The Maru-Gurjara architectural tradition reflects not only aesthetic innovation but also the material conditions of sustained patronage and skilled labour organisation. Its refinement suggests the presence of stable economic systems capable of supporting large-scale artistic production over extended periods.

Inscriptions further reveal that temple-building functioned as a socially meaningful act that connected individual donors to wider structures of political authority and mercantile prestige. These records demonstrate how religious merit was closely linked to social recognition and economic visibility.

Taken together, architecture, inscription and spatial organisation show that Jaina temples were deeply embedded in the cultural and economic life of early medieval Rajasthan. They were spaces where material wealth, religious aspiration and social identity were continuously negotiated and made visible.

Ultimately, these temples stand as enduring witnesses to a historical world in which devotion was not separate from economy or society but part of a single interconnected system of meaning and practice.

At the same time, the continued presence and relevance of these temples across centuries suggests that they cannot be understood solely within the context of their initial construction. Many of these sites remained active long after their foundation, undergoing renovation, expansion and reinterpretation by later communities. This continuity points to the adaptability



of Jaina religious institutions, which were able to respond to changing social and political conditions while maintaining a recognisable architectural and ritual framework.

The study of Jaina temples in Rajasthan, therefore also invites a broader reflection on how sacred spaces endure over time. Rather than being fixed monuments tied to a single historical moment, they function as layered sites in which multiple generations leave their mark. Architecture, inscription and patronage together create a cumulative record of these engagements, allowing us to trace not only moments of origin but also processes of continuity and transformation.

In this sense, the significance of these temples lies not only in their form or patronage but in their capacity to sustain meaning across time, linking past communities with those that followed.

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INDIA-UK FTA AND SECTORAL TRADE PERFORMANCE: EVIDENCE FROM INDIA'S TEXTILE AND PHARMACEUTICAL INDUSTRIES

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ABSTRACT

Purpose: - Present study examines the impact of the India-UK Free Trade Agreement (FTA) on India's textile and pharmaceutical exports to UK. It also studies India's Bilateral Revealed Comparative Advantage (BRCA) and the factors affecting exports and Foreign Direct Investment (FDI) between India and UK.

Design/methodology/approach: - The study is based on annual secondary data from 2000-2025. Trend analysis and BRCA are used to examine exports performance and competitiveness in textile and pharmaceutical sectors. Regression analysis and Gravity Model of Trade are used to examine the effect of GDP growth, Gross Fixed Capital Formation (GFCF), Exchange rate (ER), inflation, regulatory quality, and India-UK FTA on export and FDI. The study is also supported by the theories of comparative advantage and trade liberalisation. Further, several diagnostic tests such as multicollinearity, heteroscedasticity, and autocorrelation are applied to check the reliability of the models and to ensure robust results.

Findings: - The findings show that textile and pharmaceutical exports to UK increased during the study period, with pharmaceutical sector showing stronger growth. BRCA values indicate that India has a comparative advantage in both sectors. Regression results show that GDP growth, GFCF, ER, Regulatory quality and the FTA positively affect exports and FDI, where inflation has a negative effect. The study also suggests that trade liberalisation under the India-UK FTA can improve trade and investment relations between India and UK in the long run.

Research limitation/implications: - The study is limited to the textile and pharmaceutical sectors and uses annual secondary data. Since India-UK FTA has been recently signed, the

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study estimates its expected impact on current trade trends and economic indicators. The findings may help policymakers in improving trade policies and export competitiveness.

Originality/value: - The study is one of the few research works that examine both textile and pharmaceutical sectors together in the context of India-UK FTA using long-term data from 2000-2025. It also studies exports, comparative advantage, trade flows, and FDI together in a single framework.

Keywords: - *India-UK FTA, Textile exports, pharmaceutical exports, BRCA, Gravity Model of Trade, FDI and Trade Liberalisation.*

INTRODUCTION

India-United Kingdom (UK) trade is important for the economic growth of both the countries. UK is one of India's major trading partners because both countries have old historical and business relations (CII, 2021). During 2000 to 2025, trade between India and UK increased continuously, especially in textile and pharmaceutical sectors. The textile industry is one of the oldest industries in India, as it provides employment opportunities and improves foreign exchange reserves through exports. Das and Dubey (2013) stated that India has a strong position in textile exports because of low production cost, skilled workers, and a large manufacturing base. Indian textile exports still face number of problems such as high tariffs and competition from several countries such as Bangladesh, Vietnam, and China. Narayanan and Sharma (2016) found that these barriers reduce export advantage of India. Another significant sector is pharmaceutical industry. India is also called the "pharmacy of the world" because it provides low-cost medicines to several countries of the world (UNCTAD, 2022). Bhattacharya and Das (2014) explained that India's pharmaceutical exports have increased because of low production cost and high demand for generic medicines. Roy (2017) also found that better technology and production facilities have made this sector more competitive. Importance of India-UK trade relation increased after Brexit in 2020, when UK left the European Union. After this, UK started making trade agreements with different countries, including India. Therefore, India and UK started discussing an FTA (Free Trade Agreement) aiming tariffs reduction, trade expansion, and ease of doing business between both countries (PIB, 2025). Many studies are establishing that India-UK FTA can benefit both countries.



Agarwal (2025) estimated that the agreement may increase trade between India and UK by 15% in long term. Since several studies suggest that the agreement may increase employment, production, and economic growth in India. Textile and pharmaceutical sector are expected to benefit the most from this agreement. Lower tariffs may help Indian textile products become more competitive in UK market. In the same way better market access and easier rules may help India to export more pharmaceutical products to UK.

The primary motive of this research is to evaluate the dual impact of the India-UK FTA on India's Exports performance and FDI inflows within the textile and pharmaceutical sectors. Using a 25-years dataset (2000-2025), this study analyses how key macroeconomic variables including GDP growth, GFCF, Inflation, and ER (exchange rate) influence trade and investment. By comparing two distinct econometric models, we aim to determine if the same factors that drive exports also attract foreign investment. The section 2 presents literature review of the study section 3 includes objective and builds hypotheses of the study. Section 4 presents data, model and methodology of the study, section 5 shows analysis and section 6 presents conclusion of study, policy implication and limitation of the study.

THEORETICAL FRAMEWORK

This study is based on the theories of Comparative Advantage, Gravity Model of trade and Trade liberalisation. These theories help explain the relationship between India-UK FTA, exports, and FDI in the textile and pharmaceutical sectors.

Comparative Advantage Theory: - The Comparative Advantage Theory was developed by (Ricardo, 1817). The theory explains that countries should produce and export those goods in which they have lower production costs and better efficiency compared to other countries. International trade become beneficial when countries specialise in products where they have a comparative advantage. In present study, India-UK FTA can be explained through comparative advantage theory because India holds a comparative advantage in textile and pharmaceutical sectors due to lower production costs, availability of skilled labour, and strong manufacturing capabilities. Through the FTA, India can benefit from improved market access in UK market, reduced tariffs on exports, and better trade opportunities. Balassa (1965) further explained comparative advantage through the concept of Revealed Comparative Advantage (RCA),



which measures export competitiveness using trade performance data. In this study, Bilateral Revealed Comparative Advantage (BRCA) is used to examine India's competitiveness in UK market.

Gravity Model of Trade: - The Gravity Model of Trade explains that international trade mainly depends on the economic size of countries and the strength of trade relations between them. The model suggests that countries with larger markets, stronger economies, and better trade relations generally trade more with each other. The Gravity Model was first introduced by (Tinbergen, 1962), while (Anderson, 1979) later provided its theoretical foundation. In the present study, the model explains how factors such as GDP growth, exchange rate, investment, regulatory quality, and India-UK FTA affect exports and FDI between India and UK. The theory also supports the regression analysis used in study because the selected variables directly influence trade flows and investment relations between India and UK.

Trade Liberalisation Theory: - Trade Liberalisation Theory explains that reducing tariffs, trade restrictions, and other trade barriers helps increase international trade, investment, and economic growth. The theory supports free and open trade between countries and suggests that fewer trade barriers improve export performance and market access. According to Sachs and Warner (1995), countries with open policies generally achieve higher economic growth and better integration with the global economy. Similarly, Krueger (1997) explained that trade liberalisation improves international competitiveness and encourages economic development. In present study, India-UK FTA is based on the idea of trade liberalisation because the agreement aims to reduce tariffs, improve market access, simplify trade procedures, and encourage bilateral trade and investment between India and UK.

The trade relationship between India and UK has become more important after Brexit. After leaving the European Union, UK started building new trade partnerships with growing economies outside Europe. India became an important partner because of its large market, skilled workforce, and growing role in global trade (Richardson, 2024). Therefore, the proposed India-UK FTA is expected to improve trade, investment, and economic cooperation between both countries (Khan, 2024). An FTA is an agreement between countries to reduce tariffs and other trade barriers. According to trade theory, FTAs help increase exports, improve market access, attract foreign investment, and support economic growth. Studied show that



trade liberalization improves business opportunities and international competitiveness (Sowrov, 2024). In the case of India-UK FTA, sectors such as textile and pharmaceutical are expected to benefit the most because of better market access and lower trade barriers (Sharma and Bharti, 2024). FDI is also an important part of international trade relations. FDI means investment made by foreign companies in another country for production, business expansion, or market access. Economic theories explain that investors prefer countries with stable policies, good infrastructure, and strong market potential. FTAs help attract FDI by reducing uncertainty and improving investor confidence (Khan, 2024). Therefore, India-UK FTA may increase FDI inflows into India, especially in export-oriented industries. The textile sector plays an important role in India's economy through exports, employment generation, and industrial development. India has advantages such as low labour cost, raw material availability, and a strong manufacturing base. However, the sector also faces challenges from global competition and trade barriers. Studies suggest that FTAs can improve textile export competitiveness by reducing tariffs and increasing market access (Sharma and Bharti, 2024). Similarly, the pharmaceutical sector is one of India's strongest export industries. India is known as the "pharmacy of the world" because of its large production of affordable generic medicines. The growth of pharmaceutical exports depends on technology, innovation, regulatory approvals, and intellectual property rights. Researchers explain that better regulatory cooperation under India-UK FTA can improve pharmaceutical exports and investment opportunities (Upreti and Chandel, 2025). Macroeconomic variables also influence exports and FDI inflows. GDP growth increases production capacity and investor confidence, while Gross Fixed Capital Formation (GFCF) improves infrastructure and industrial efficiency. Inflation affects production costs, and exchange rate movements influence export competitiveness and investment decisions. Many studies identify these variables are important determinants of exports and FDI in developing economic (Martinez-Zarzoso, 2024). Therefore, analysing the relationship between India-UK FTA, export, FDI and macroeconomic variables provides a strong conceptual base for this study.

CONCEPTUAL FRAMEWORK

The trade relationship between India and UK has become more important after Brexit. After leaving the European Union, UK started building new trade partnerships with growing economies outside Europe. India became an important partner because of its large market,



skilled workforce, and growing role in global trade (Richardson, 2024). Therefore, the proposed India-UK FTA is expected to improve trade, investment, and economic cooperation between both countries (Khan, 2024). An FTA is an agreement between countries to reduce tariffs and other trade barriers. According to trade theory, FTAs help increase exports, improve market access, attract foreign investment, and support economic growth. Studies show that trade liberalization improves business opportunities and international competitiveness (Sowrov, 2024). In the case of India-UK FTA, sectors such as textile and pharmaceutical are expected to benefit the most because of better market access and lower trade barriers (Sharma and Bharti, 2024). FDI is also an important part of international trade relations. FDI means investment made by foreign companies in another country for production, business expansion, or market access. Economic theories explain that investors prefer countries with stable policies, good infrastructure, and strong market potential. FTAs help attract FDI by reducing uncertainty and improving investor confidence (Khan, 2024). Therefore, India-UK FTA may increase FDI inflows into India, especially in export-oriented industries. The textile sector plays an important role in India's economy through exports, employment generation, and industrial development. India has advantages such as low labour cost, raw material availability, and a strong manufacturing base. However, the sector also faces challenges from global competition and trade barriers. Studies suggest that FTAs can improve textile export competitiveness by reducing tariffs and increasing market access (Sharma and Bharti, 2024). Similarly, the pharmaceutical sector is one of India's strongest export industries. India is known as the "pharmacy of the world" because of its large production of affordable generic medicines. The growth of pharmaceutical exports depends on technology, innovation, regulatory approvals, and intellectual property rights. Researchers explain that better regulatory cooperation under India-UK FTA can improve pharmaceutical exports and investment opportunities (Upreti and Chandel, 2025). Macroeconomic variables also influence exports and FDI inflows. GDP growth increases production capacity and investor confidence, while Gross Fixed Capital Formation (GFCF) improves infrastructure and industrial efficiency. Inflation affects production costs, and exchange rate movements influence export competitiveness and investment decisions. Many studies identify these variables are important determinants of exports and FDI in developing economic (Martinez-Zarzoso, 2024). Therefore, analysing the



relationship between India-UK FTA, export, FDI and macroeconomic variables provides a strong conceptual base for this study.

LITERATURE REVIEW

In early stage, most studies on India's trade tried to answer a very basic question- what is India good at exporting and how competitive is it the global market? Researches were mainly interested in understanding India's strengths and weaknesses in international trade. For example, Batra and Khan (2005) compared India with China using concept of Revealed Comparative Advantage (RCA) study showed India has a strong advantage in labour-intensive industries such as textile. India can produce these goods at a lower cost compared to other countries, making it more competitive and mainly focused on overall export performance and did not look at trade with specific countries like UK. Similarly, Veeramani (2008) explained that when India opens its economy to international trade and imports better machines, technology, and intermediate goods, its export performance improves. Highlights importance of trade openness in boosting exports, but general in nature and did not focus on particular sectors such as textile and pharmaceutical. In the same line, Karmakar and Das (2012) showed that reducing tariffs and other trade barriers leads to an increase in exports and suggests that government policies play a key role in promoting trade. Wignaraja (2015) further added that participation in global value chains and international trade agreements helps countries grow and improve their export performance. Even though these studies provide useful insights, they do not focus specifically on India-UK trade relations, and they do not combine sector-level analysis with trade agreements. A major turning point came with Brexit, when UK decided to leave European Union (EU). This event created new opportunities for countries such as India to develop independent trade relations with UK. Banga and Kumar (2017) explained that Brexit opened the door for India to negotiate its own trade agreement with UK, which was not possible earlier when UK was part of EU. Supporting this idea, Chaisse and Matsushita (2018) suggested that India could strengthen its bilateral trade relations with UK in the post-Brexit period. Dasgupta (2018) pointed out that Brexit could bring both opportunities and challenges, depending on how future trade policies are designed and implemented. As time passed, more studies started focusing directly on India-UK trade relationship. Kumar and Ahmed (2020) predicted that trade between India and UK would increase significantly if FTA is signed.



Similarly, Ghosh (2021) highlighted that certain sectors, especially textile and pharmaceuticals get more benefit. Das and Pradhan (2021) also explained that FTAs generally help in improving export performance by reducing trade barriers and increasing market access. This view is supported by institutional reports such as (TPCI, 2021; CATR, 2021), which clearly state that India-UK FTA would reduce tariffs and make it easier for Indian products to enter UK market. Sharma and Gupta (2022) also agreed that tariff reduction would increase trade between the two countries. Large organizations and policy institutions have also supported this idea. Reports by (PHDCCI, 2023; RBI, 2023; NITI Aayog, 2024; Confederation of Indian Industry, 2022) all suggest that sectors such as textile and pharmaceutical are expected to gain the most from India-UK FTA. These reports highlight that sectors already have strong export potential and can benefit further from reduced trade barriers. In addition, more recent policy-based studies such as (Banga, 2019; Department for international trade, 2021; Department for Business and Trade, 2024; EY India, 2022) provide strong evidence that proposed FTA will increase trade flows, improve market access, and create new opportunities for export-oriented industries. At the same time, some researchers have focused on understanding the current trade relationship between India and UK. For example, Sikdar and Nag (2011) used a gravity model and found that India has significant untapped trade potential with UK, means actual trade between two countries is lower than what it could be. Kumar (2013) observed that bilateral trade has been increasing over time, but it still has a lot of room for growth. Singh and Kaur (2014) found strong trade complementarity between India and UK, which means India's exports match well with UK's import needs, that is positive sign for future trade expansion. Bose and Chatterjee (2019) also showed that trade intensity has improved, it is still below its potential level. Similarly, Bhatia (2020) found that India is quite competitive in UK market, especially in sectors such as textiles, garments, and pharmaceutical. However, studies mainly describe present situation and do not examine the long-term impact on a future FTA. A large number of studies have focused specifically on India's textile sector, which is one of the most important contributors to export earnings and employment. Das and Dubey (2013) explained that India has a strong export potential in textile due to low production costs and availability of abundant labour. Sharma and Prashaant (2009) showed that textile exports improved significantly after the removal of quotas, which allowed India to compete more freely in global markets. Sharma (2015) further explained that end of Multi-Fibre Arrangement led to growth in



textile exports. Narayanan and Sharm (2016) confirmed India's strong comparative advantage in textile using RCA analysis, while (Banerjee, Chattopadhyay and Lahiri, 2016) argued that India continues to remain competitive despite increasing global competition. Identified key factors such as GDP growth, exchange rate, and investment that influence textile exports by (Ramaswamin and Singh, 2018). More recent reports such as (IBEF, 2025; Kathuria and Malouche, 2016; UNCTAD, 2022; Sekhar and Banerjee, 2026) highlight that India is one of the largest textile exporters in World, studies also suggest that trade agreements such as India-UK FTA can further boost exports by reducing tariffs and improving market access. Similarly, pharmaceutical sector has also been widely studied because of its growing importance in India's exports. Bhattacharya and Das (2014) explained that India's pharmaceutical exports have increased due to the production of low-cost generic medicines, which are in high demand globally, and also pointed out that regulatory barriers can be a challenge. Rajeev and Mazumdar (2009) showed improvements in efficiency within pharmaceutical industry, while (Roy, 2017) highlighted the global competitiveness of Indian pharmaceutical firms, and (Kaur and Kaur, 2019) explained India's pharmaceutical exports have become more diversified across different countries and regions. Reports such as (EXIM Bank, 2020; WHO, 2021) confirm that India is one of the leading suppliers of medicines in the world, studies suggest India has strong export potential in the pharmaceutical sector and can benefit further from trade agreements. Finally, recent industry and policy reports such as (Grant Thornton Bharat, 2024; Agarwal, 2025; Mukherjee and Jauhri, 2025; Alinea Customs, 2025; Deloitte Touche Tohmatsu India, 2025; Inductus Global, 2025) strongly support the idea that India-UK FTA will increase bilateral trade and provide significant benefits to sectors such as textiles and pharmaceutical, reports highlight future opportunities, such as better market access, reduced tariffs, and increased exports and most of these studies are based on projections and expectations rather than detailed empirical analysis using long-term data. Overall, when look at all studies together a clear picture emerges. There is a large amount of research on India's trade performance, FTA, and individual sectors such as textiles and pharmaceuticals. However, very few studies either focus on general trade patterns or analyse sectors separately. Many of them also do not consider UK as a specific market, especially in context of Brexit and proposed India-UK FTA. Because of this, there is a clear research gap in understanding the combined and long-term impact of the India-UK FTA on India's textile and pharmaceutical exports, particularly over the period 2000 to 2025. This



gap makes the present study important, as it attempts to bring all these aspects together in a single analysis.

OBJECTIVE OF THE RESEARCH

1. To examine the Trend and growth pattern of India's textile exports to UK.
2. To examine the Trend and growth pattern of India's pharmaceutical exports to UK.
3. To evaluate India's BRCA in textile export to UK.
4. To evaluate India's BRCA in pharmaceutical export to UK.
5. To analyse the impact of macroeconomic, trade and institutional factors on India's textile exports to UK.
6. To analyse the impact of macroeconomic, trade and institutional factors on India's pharmaceutical exports to UK.
7. To examine the determinants of Foreign Direct Investment (FDI) in India's textile sectors.
8. To examine the determinants of Foreign Direct Investment (FDI) in India's pharmaceutical sectors.

HYPOTHESES OF THE RESEARCH

H1: There is a significant trend and growth in India's textile exports to UK.

H2: There are a significant trend and growth in India's pharmaceutical exports to UK.

H3: India has a significant BRCA in textile exports to UK.

H4: India has a significant BRCA in pharmaceutical exports to UK.

H5: Macroeconomic, trade, and institutional factors have a significant impact on India's textile exports to UK.

H6: Macroeconomic, trade, and institutional factors have a significant impact on India's pharmaceutical exports to UK.



H7: Macroeconomic, trade, and institutional factors have a significant impact on FDI in India's textile sectors.

H8: Macroeconomic, trade, and institutional factors have a significant impact on FDI in India's pharmaceutical sectors.

Data and Model Specification: - This study looks at how trade between India and UK affects two important sectors, textiles and pharmaceutical. It studies how exports and foreign direct investment (FDI) are related to other important factors like economic conditions, trade policies, and institutional quality. Study uses a time-series method and is based on yearly data from 2000-2025. This period is chosen to understand long-term trends and investment, as well as recent changes related to the proposed India-UK Free Trade Agreement (FTA). Since the FTA is not fully active, dummy variable have been used in the study to account for its future impact.

Variables and Data Sources: - In this study, since there are two dependent variables a) export and b) FDI inflows, also two significant sectors have been considered textile and pharmaceutical. Hence, we propose 4 models in this study. Continue from previous page textile exports and pharmaceutical exports to UK show how well these sectors are performing in trade, while FDI inflows show how much foreign investment is coming into these sectors. Several independent variables taken in the study such as, GDP growth is included to show the overall performance of the economy. Gross Fixed Capital Formation is used to represent investment and infrastructure development in the country. The Real Effective Exchange Rate is taken to understand competitiveness of India in international trade. Regulatory quality is used to measure effectiveness of the government rules and policies. Inflation is included to show the stability of the economy. Takes a dummy variable has been also used India-UK FTA to understand its expected impact, as the agreement is not fully implemented yet. The study also uses past (lagged) values of exports and FDI to understand how current values are affected by previous trends. All the data used in this study is secondary data, collected from government reports, international databases, and official trade statistics Table1. In addition to econometric analysis, trend analysis is use to understand how exports and FDI have grown over the time. The BRCA index is also used to check whether India has a strong advantage in exporting textiles and pharmaceutical to UK.



Research Methodology: - This study uses a quantitative research method based on time-series data to achieve its objectives. It combines three main methods, trend analysis, BRCA analysis, and regression analysis to understand trade and investment between India and UK. To begin with Trend analysis is used to study the growth and direction of textile and pharmaceutical exports over the time. To understand exports during the study period. Second, the BRCA index is used to check whether India has an advantage in exporting these products to UK. For deeper analysis, study uses econometric models are shown in (equation 1- 4). Four regression models are used in the study the Ordinary Least Squares (OLS) method.

Table 1: Variables, Proxies, Abbreviation and Sources

| Variable | Proxies | Abbreviation | Source |
|--------------|---|--------------|--|
| Dependent: | India's textile export performance to UK | TEXEX | https://wits.worldbank.org/ https://niryat.gov.in/ |
| | India's pharmaceutical export performance to UK | PHARMAEX | https://comtrade.un.org |
| | FDI in Textile Sector | FDITEX | https://dpiit.gov.in |
| | FDI in Pharmaceutical Sector | FDIPHARMA | https://dpiit.gov.in |
| Independent: | 1 GDP Growth | GDPG | https://databank.worldbank.org |
| | 2. Gross Fixed Capital Formation | GFCF | https://www.rbi.org.in |
| | 3. Real Effective Exchange Rate | ER | https://databank.worldbank.org |
| | 4. Regulatory Quality | REG | https://databank.worldbank.org |
| | 5. Free Trade Agreement | FTA | https://www.commerce.gov.in https://www.pib.gov.in |
| | 6. Inflation | INFL | https://databank.worldbank.org |

Source(s): Compiled by Author



A. Trend analysis: - To understand how exports are growing every year, this study uses the year-on-year growth rate method. It shows how much exports have increased or decreased compared to the previous year.

The formula used is:

$$\text{Growth Rate} = \frac{X_t - X_{t-1}}{X_{t-1}} 100$$

Here: X_t = Export value in the current year

X_{t-1} = Export value in the previous year

B. Bilateral Revealed Comparative Advantage (BRCA): -

$$\text{BRCA} = \frac{X_{ij}/X_{it}}{M_{wj}/M_{wt}}$$

X_{ij} : India's exports of sector j (Textile/Pharma) to UK.

X_{it} : India's total exports to UK.

M_{wj} : World's total exports of sector j to UK (UK's total imports of j).

M_{wt} : World's total exports to UK (UK's total imports).

The study estimates four distinct log-linear models using the Ordinary Least Squares (OLS) method to determine the drivers of trade and investment.

Model 1: Textile Exports (TEX_{EX}): - $\ln \text{TEX}_{EX} = \beta_0 + \beta_1 \text{GDPG} + \beta_2 \text{GFCF} + \beta_3 \text{ER} + \beta_4 \text{REG} + \beta_5 \text{FTA} + \beta_6 \text{INFL} + \beta_7 \ln (\text{TEX}_{EX})_{t-1} + \epsilon$

Model 2: Pharmaceutical Exports (PHARMA_{EX}): - $\ln (\text{PHARMA}_{EX}) = \beta_0 + \beta_1 \text{GDPG} + \beta_2 \text{GFCF} + \beta_3 \text{ER} + \beta_4 \text{REG} + \beta_5 \text{FTA} + \beta_6 \text{INFL} + \beta_7 \ln (\text{PHARMA}_{EX})_{t-1} + \epsilon$

Model 3: FDI in textile sector (FDI_{TEX}): - $\ln (\text{FDI}_{TEX}) = \beta_0 + \beta_1 \text{GDPG} + \beta_2 \text{GFCF} + \beta_3 \text{ER} + \beta_4 \text{REG} + \beta_5 \text{FTA} + \beta_6 \text{INFL} + \beta_7 \ln (\text{FDI}_{TEX})_{t-1} + \epsilon$

Model 4: FDI in textile sector (FDI_{PHARMA}): - $\ln (\text{FDI}_{PHARMA}) = \beta_0 + \beta_1 \text{GDPG} + \beta_2 \text{GFCF} + \beta_3 \text{ER} + \beta_4 \text{REG} + \beta_5 \text{FTA} + \beta_6 \text{INFL} + \beta_7 \ln (\text{FDI}_{PHARMA})_{t-1} + \epsilon$



Two models study factors affecting textile and pharmaceutical export to UK and two models study the factors affecting the FDI inflows in these sectors. In all models the dependent variables are taken in log form. Before running the regression, descriptive statistics are used to understand the basic feature of the data. To make sure the results are correct and reliable some diagnostic tests are also done these are: Multicollinearity test (VIF) to check is variables are highly related, Heteroscedasticity test to check is variance is constant, and Autocorrelation test using the Durbin-Watson test. Overall, this method helps to understand both long-term trends and short-term changes, and gives an idea about the expected impact of India-UK FTA on textile and pharmaceutical sectors.

RESULTS AND ANALYSIS

The empirical findings of the study, structured to address the four primary research objectives. The analysis begins with a descriptive evaluation of trade patterns and specialization indices, followed by the estimation of econometric models to identify the underlying determinants of India-UK sectoral trade and investment.

Table 2 presents descriptive statistics for the variables used in the study during 2000-2025. The mean value of log textile exports (6.95) is higher than the log pharmaceutical exports (5.52), although pharmaceutical exports show greater variability, with a standard deviation of 1.02 compared to 0.56 for textiles.

Table 2. Descriptive Statistics

| Variable | Mean | Median | Minimum | Maximum | Standard Deviation |
|--------------|----------|----------|----------|----------|--------------------|
| Ln TEXEX | 6.945727 | 7.11125 | 5.895449 | 7.712055 | 0.555401091 |
| Ln PHARMAEX | 5.518772 | 5.968159 | 3.09874 | 6.633542 | 1.020171255 |
| Ln FDITEX | 6.480593 | 6.710006 | 4.389499 | 7.352441 | 0.75723852 |
| Ln FDIPHARMA | 7.291524 | 7.520938 | 5.200429 | 8.163371 | 0.757238734 |
| GDPG | 6.238369 | 7.1028 | -5.7777 | 9.6896 | 3.021858689 |
| GFCF | 29.75385 | 30.4 | 23.9 | 33.8 | 3.192018893 |
| ER | 107.0827 | 105.25 | 92.5 | 124 | 10.16586742 |
| REG | 51.06808 | 51.24 | 47.9 | 55.7 | 1.91653 |
| FTA | 0.153846 | 0 | 0 | 1 | 0.367946484 |
| INFL | 5.932692 | 5.04 | 1.71 | 11.99 | 2.65487 |

Source (s): Compiled by Authors

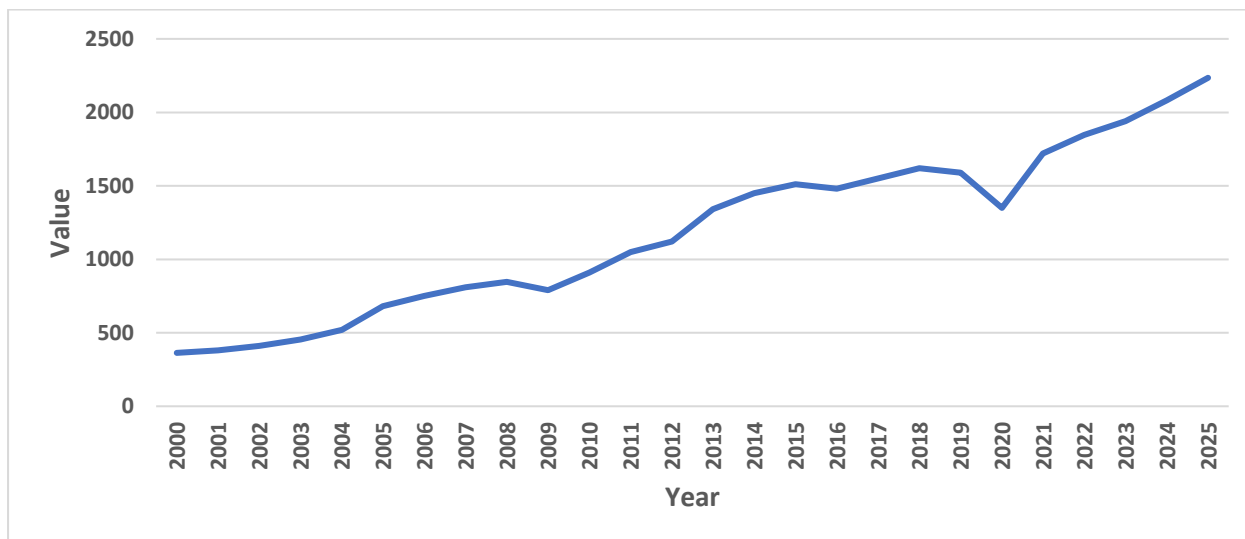


This suggests that while textile represents a “mature” and stable export base, the pharmaceutical sector has undergone more rapid and fluctuating structural growth over the last two decades. In contrast, FDI inflows is higher in the pharmaceutical sector (7.29) than in the textile sector (6.48), reflecting the capital-intensive nature of medical manufacturing and the sector’s higher attractiveness to foreign investors. Regarding macroeconomic indicators, GDP growth averages 6.24, reflects the significant external shocks India has faced, (World Bank, 2021). GFCF shows a robust mean of 29.75, indicating a strong investment level, consistent with the finding of the (UNCTAD , 2023). The mean ER is 107.08, suggesting changing export competitiveness over time, which supports the importance of exchange rates highlighted by the (IMF, 2024). Inflation averages 5.93, while the FTA dummy mean is 0.15 indicates that FTA periods cover a limited share of the sample.

TREND ANALYSIS OF TEXTILE AND PHARMACEUTICAL EXPORTS TO UK: -

The trend analysis indicates that India’s exports increased substantially from USD 363.38 million in 2000 to USD 2235.13 million in 2025, reflecting strong long-term growth in textile sector. Textile grew consistently between 2001 and 2008, with the highest growth rate recorded in 2005 (30.68). This strong performance suggests increasing global demand and greater export competitiveness of the Indian textile industry. The textile sector showed that it is strongly affected by global economic conditions. For instance, exports fell by 6.59 during the 2009 Global Financial Crisis and by 15.10 during the 2020 COVID-19 pandemic. This shows that the sector depends a lot on global demand and is sensitive to international shocks. According to Goswami (2022), such ups and downs are common in labour-intensive industries, especially during time of global uncertainty. However, the sector also showed strong recovery, in 2021 exports increased by 27.42 which show a “V-shaped recovery” Figure 1, mainly due to the reopening of global supply chains (World Bank, 2021).

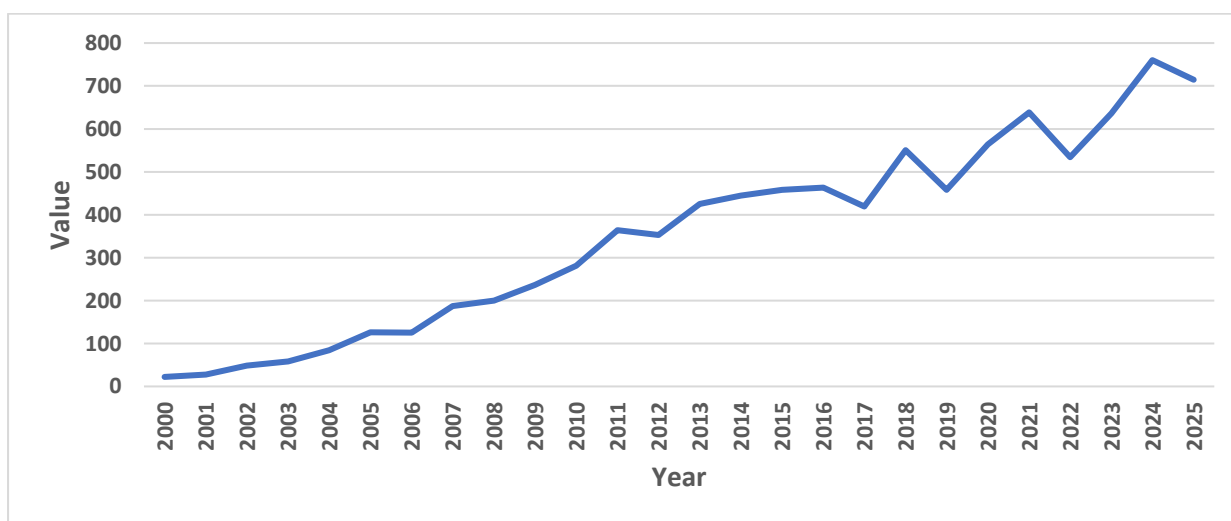
Figure: Indicate Textile Export (US \$ Mn)



Source(s): Compiled by Authors

On the other hand, pharmaceutical exports showed a strong overall increase, rising from USD 22.17 million in 2000 to USD 714.72 million in 2025. However, the growth was more uneven compared to the textile sector. The highest growth rates in pharmaceutical were seen in certain years Figure 2, which indicates fast growth of India’s pharmaceutical industry and increasing global demand, especially for generic medicines.

Figure 2: Indicate Pharmaceutical Export (US \$ Mn)



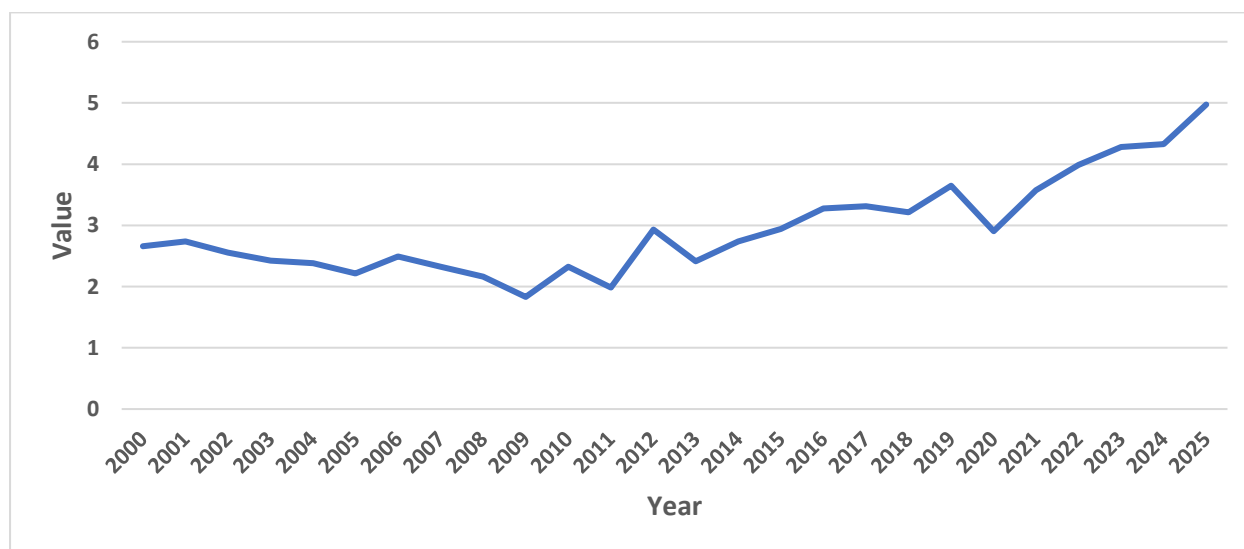
Source(s): Compiled by Authors



Unlike textiles, pharmaceutical exports increased during the COVID-19 period, rising by 23.16 in 2020 and 13.30 in 2021. This suggests that India’s pharmaceutical industry benefited from rising global demand for medicines, vaccines, and active pharmaceutical ingredients during the pandemic. This performance solidifies India’s role as the “Pharmacy of the world,” a status recognized by the (WHO, 2021) during the global health emergency.

BRCA Analysis: - To understand whether India has a specializes advantage in exporting textiles and pharmaceuticals to UK, this paper used BRCA index. According to the framework given by (Balassa, 1965), a BRCA value (> 1) shows that a country has a comparative advantage in that sector. BRCA analysis show that India has a strong and continuous comparative advantage in textile exports to UK Figure 3.

Figure 3: Indicate Textile BRCA



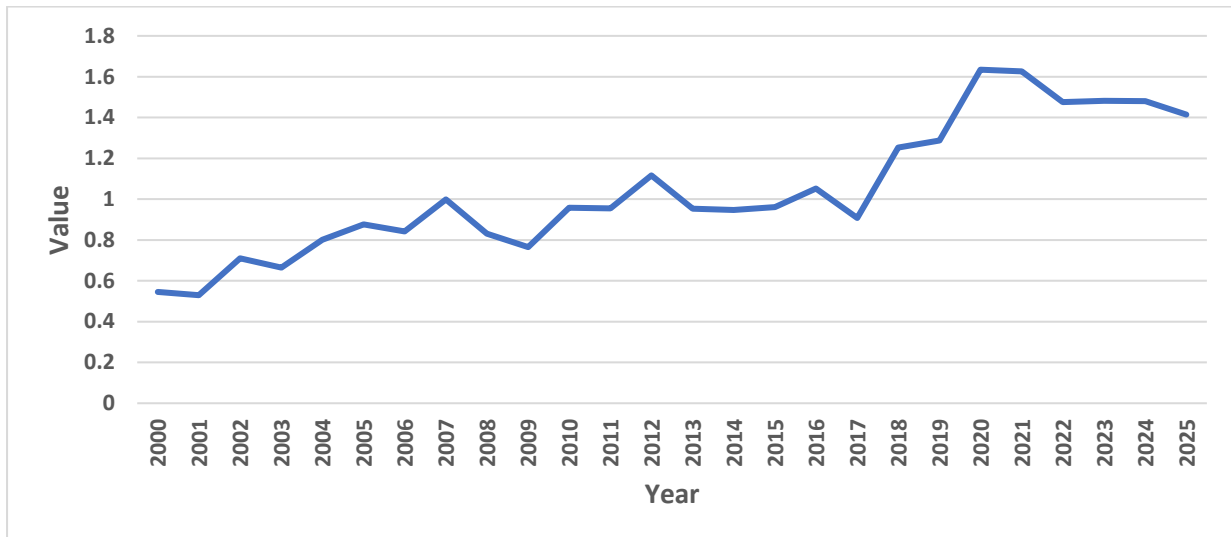
Source(s): Compiled by Authors

The textile BRCA remained above 1 throughout 2000-2025, rising from 2.66 in 2000 to 4.97 in 2025. Although it declined to 1.83 in 2009 due to the Global Financial Crisis, it recovered steadily after 2012. The consistently high values indicate strong export specialization and competitiveness in UK market, supporting the findings of (Majeed, 2022) this higher BRCA values reflect stronger international competitiveness.



Rise after 2012 shows India's pharmaceutical sector started becoming more competitive in the global market. During this period, BRCA value crossed 1, which indicates a shift from a weaker position to a stronger comparative advantage (Figure 4).

Figure 4: Indicate Pharmaceutical BRCA



Source(s): Compiled by Authors

This improvement continued over the years and reached its peak in 2020 during COVID-19, mainly because of high global demand for Indian generic medicines. Although the value declined slightly to 1.41 in 2025, it still remained above 1, which means India was able to maintain its competitive position. Similar findings are supported by (French, 2017), who explains that increasing BRCA values reflect better trade efficiency. Additionally, Goswami (2021) highlights that improvements in regulation and institutional quality have India strengthen its position.

Next, study presents the pre-estimation diagnostic tests conducted to ensure the structural stability and econometric validity of the four research models. Variables were tested by multicollinearity, heteroscedasticity, and autocorrelation as detailed below:

Study tested multicollinearity of the explanatory variables using Variance Inflation Factor (VIF). As summarized in Table 3 VIF values across all models remain well below the conservative threshold of 10 (Gujarati and Porter, 2020). In model 2, results show that there is



no serious multicollinearity problem in the model. This means each variable, provides its own separate and reliable information, and the results are stable.

Table 3: Multicollinearity Test

| Variable | GDPG | GFCF | ER | REG | FTA | INFL | LAG LN |
|-----------|-------|-------|-------|-------|-------|-------|--------|
| TEXEX | 1.244 | 2.613 | 3.378 | 2.639 | 2.23 | 2.234 | 2.081 |
| PHARMAEX | 1.286 | 3.122 | 7.71 | 2.639 | 2.775 | 2.36 | 6.414 |
| FDITEX | 1.268 | 1.268 | 4.176 | 2.674 | 2.406 | 2.287 | 3.0833 |
| FDIPHARMA | 1.265 | 2.68 | 3.845 | 2.67 | 2.361 | 2.275 | 2.721 |

Source(s): Compiled by Authors

To check whether the results are reliable, the residuals were tested for constant variance (homoscedasticity) and no autocorrelation. The Breusch-Pagan test results Table 4 show that the p-value for the pharmaceutical and FDI models are above 0.05. this means there is no heteroscedasticity problem, and the variance of errors is constat. For the textile export model, the P-value is 0.054, and indicates that the error variance is mostly constant over the period 2000-2025. Overall, the results suggest that the models satisfy the assumption of homoscedasticity and are reliable.

Table 4: Heteroscedasticity Test

| Model | Breusch-Pagan value |
|--------------|---------------------|
| 1. TEXEX | 0.054 |
| 2. PHARMAEX | 0.901 |
| 3. FDITEX | 0.793 |
| 4. FDIPHARMA | 0.776 |

Source(s): Compiled by Authors

The Durbin-Watson (DW) test was used to test autocorrelation in the model. A DW value close to 2 means there is no autocorrelation problem. The DW vales for the textile and FDI models are table 5 which are very close to 2. This shows that these models do not have any serious autocorrelation problem and the result are reliable. The pharmaceutical export model has a DW value of 2.48, value is slightly higher than 2, it is still acceptable because the model includes the past value of exports. Therefore, the model is also considered reliable.



Table 5: Autocorrelation Test

| Model | Durbin-Watson Value |
|--------------|---------------------|
| 1. TEXEX | 2.107 |
| 2. PHARMAEX | 2.485 |
| 3. FDITEX | 2.086 |
| 4. FDIPHARMA | 2.08 |

Source(s): Compiled by Authors

Model 1: Determinants of India’s textile exports: -

The results of model 1 show that GDP growth, GFCF. And ER all have a positive and significant impact on textile exports presented in table 6. Among these, GFCF has the strongest effect which means that higher investment and better infrastructure increase production and improve export performance. This supports the idea given by (UNCTAD, 2022) that more capital investment is important for improving exports in developing countries. The ER also has a positive effect, which means that when the exchange rate is favourable, Indian textile products become more competitive and attractive in international markets. This is also supported by IMF (2021), which states that a good exchange rate helps in increasing exports. Significant of GDPG implies that domestic economic expansion facilitates textile exports through enhanced production efficiency and greater integration with global supply chain. In contrast, inflation and lagged textile export variable are found to be insignificant in this model, as show in Table 6. This suggests that India’s textile exports are more sensitive to structural investment.

Table 6: Model 1 Textile export

| Variables | Coefficient | Std. Error | t-Statistic | P Value |
|--------------|-------------|------------|-------------|----------|
| GDPG | 0.012 | 0.005 | 2.195 | 0.041** |
| GFCF | 0.051 | 0.008 | 6.453 | 0.000*** |
| ER | 0.055 | 0.002 | 19.532 | 0.000*** |
| REG | -0.019 | 0.013 | -1.424 | 0.171 |
| FTA | -0.286 | 0.064 | -4.458 | 0.000*** |
| INFL | 0.005 | 0.008 | 0.606 | 0.551 |
| LAG LN TEXEX | 0.001 | 0.015 | 0.070 | 0.944 |



| | | | | |
|----------------|----------|--|--|--|
| Significance F | 0.000*** | | | |
| R Square | 0.98 | | | |
| Adjusted R | 0.97 | | | |

Note(s) ** and ***Denote significant at 5 and 1 per cent, respectively

Source(s): The authors

The REG variable shows negative and insignificant relationship. Although some other studies reported by (UNCTAD, 2022; Kathuria and Malouche, 2016), explained that regulatory burdens can reduce export competitiveness in developing countries. Similarly, the FTA variable has a negative coefficient, indicating that trade liberalization may increase international competition for India’s textile sector. Competition from countries such as Bangladesh, Vietnam, and China may create pressure on Indian exporters, (Banga , 2019; WTO, 2023) also found that FTA benefits often take time to appear because industries need time to adjust to new market conditions.

Model 2: Determinants of India’s Pharmaceutical Exports: -

Model 2 gives a clear picture of India’s pharmaceutical exports. The model is strong, explaining about 98 of the variation, which shows the variables are reliable. It finds that GDP growth and regulatory factors are not significant, supporting studies such as (Veeramani, 2008; Bhattacharya and Das, 2014), explains pharmaceutical exports depend more on global demand than domestic conditions. REG coefficient also shows negative and insignificant relationship with pharmaceutical exports, similar findings reported by (UNCTAD, 2022; EXIM Bank, 2020), which explained that complex regulatory procedures and intellectual property requirements can negatively affect pharmaceutical exports from developing countries.

Table 7: Model 2 Pharmaceutical export

| Variables | Coefficient | Std. Error | t-Statistic | P Value |
|-----------|-------------|------------|-------------|----------|
| GDPG | 0.008 | 0.010 | 0.792 | 0.438 |
| GFCF | 0.078 | 0.015 | 4.905 | 0.000*** |
| ER | 0.078 | 0.007 | 9.912 | 0.000*** |
| REG | -0.001 | 0.024 | -0.052 | 0.959 |



| | | | | |
|-----------------|----------|-------|--------|----------|
| FTA | -0.614 | 0.130 | -4.709 | 0.000*** |
| INF | 0.049 | 0.016 | 2.974 | 0.008*** |
| LAG LN PHARMAEX | 0.169 | 0.049 | 3.408 | 0.003*** |
| Significance F | 0.000*** | | | |
| R Square | 0.98 | | | |
| Adjusted R | 0.98 | | | |

Note(s) ***Denote significant at 1 per cent, respectively

Source(s): The authors

The key factors driving pharmaceutical exports are GFCF, ER, inflation, and past export performance, all the variables are showing a positive and significant effect. This means better infrastructure and global competitiveness help increase exports, as also highlighted by (Roy, 2017; Kaur and Kaur , 2019). Surprisingly the inflation is having a positive and significant impact on the pharmaceutical export, which can be explained by the fact that inflation is making exported product cheaper in the foreign market. However, the FTA variables show a negative and significant impact, suggesting short-term challenges, which aligns with (Dasgupta, 2018). Overall, while the sector is strong, the benefits of India-UK FTA may take time to fully emerge, as expected by (Kumar and Ahmed , 2020; Ghosh, 2021) .

Model 3: Determinants of FDI Inflows in the Textile sector: -

Model 3 shows a different angle of India’s textile sector by focusing on FDI. It explains that overall economic growth and regulatory factors do not play a major role in attracting foreign investment, which means investors care more about sector-specific conditions than the general economy, as also supported by (Kathuria and Malouche, 2016).

Table 8: Model 3 FDI Textile

| Variables | Coefficient | Std. Error | t-Statistic | P Value |
|-----------|-------------|------------|-------------|----------|
| GDPG | 0.007 | 0.006 | 1.059 | 0.303 |
| REG | 0.017 | 0.015 | 1.114 | 0.279 |
| GFCF | 0.040 | 0.009 | 4.377 | 0.000*** |
| INFL | 0.033 | 0.010 | 3.266 | 0.00*** |



| | | | | | |
|----------------|--|----------|-------|--------|----------|
| ER | | 0.051 | 0.003 | 14.335 | 0.000*** |
| FTA | | -0.336 | 0.075 | -4.439 | 0.000*** |
| LAG LN FDITEX | | 0.176 | 0.021 | 8.185 | 0.000*** |
| Significance F | | 0.000*** | | | |
| R Square | | 0.98 | | | |
| Adjusted R | | 0.98 | | | |

Note(s) ***Denote significant at 1 per cent, respectively

Source(s): The authors

GFCF, ER, Inflation, and past investment trends make textile sector more attractive and competitive globally, which aligns with (UNCTAD, 2022). Overall, textile FDI depends more on investor confidence and market conditions, and the FTA coefficient negative relationship with FDI inflows indicating that benefits of the India-UK FTA may the time to appear, some supporting reports (WTO, 2023; Banga , 2019).

Model 4: Determinates of Foreign Investment in India’s Pharmaceutical sector: -

Model shows FDI in India’s pharmaceutical sector is mainly driven by sector strength rather than overall economic growth or regulations, which are not very important here. This supports (Bhattacharya and Das, 2014), as the pharmaceutical sector is more globally focused.

Table 9: Model 4 FDI and Pharmaceutical Sector

| Variables | Coefficient | Std. Error | t-Statistic | P Value |
|------------------|-------------|------------|-------------|----------|
| GDPG | 0.007 | 0.007 | 1.083 | 0.293 |
| REG | 0.018 | 0.016 | 1.128 | 0.273 |
| GFCF | 0.042 | 0.009 | 4.414 | 0.000*** |
| INFL | 0.035 | 0.010 | 3.271 | 0.004*** |
| ER | 0.053 | 0.003 | 14.853 | 0.000*** |
| FTA | -0.354 | 0.078 | -4.509 | 0.000*** |
| LAG LN FDIPHARMA | 0.149 | 0.019 | 7.714 | 0.000*** |
| Significance F | 0.000*** | | | |
| R Square | 0.98 | | | |
| Adjusted R | 0.98 | | | |

Note(s) ***Denote significant at 1 per cent, respectively

Source(s): The authors



The favourable factors make more competitive and attractive to investors, as highlighted by (Kaur and Kaur , 2019; WHO, 2021). FTA shows a negative short-term impact, suggesting initial challenges like policy changes or strict standards (Dasgupta, 2018; Kumar and Ahmed , 2020; WHO, 2021).

The results support all four alternative hypotheses. Figure 1 & 2 shows a significant increase in India's textile and pharmaceutical exports to UK during 2000-2025. Table 10 indicates BRCA values above one, confirming India's comparative advantage in both sectors. Further, Table 10 shows that macroeconomic, trade and institutional factors significantly influence exports and FDI. The significant level takes in this paper that is 5% but mostly results come at 1%. Therefore, all null hypotheses are rejected and the alternative hypotheses are accepted.

Table 10: Hypotheses Result

| Hypotheses | Statements | Main variables | Result/ Key value | Decision |
|------------|--|---|---|----------|
| H1 | There are a significant trend and growth in India's textile and pharmaceutical exports to UK. | Trend / Growth rate | Growth during 2000-2025 | Accepted |
| H2 | India has a significant BRCA in textile and pharmaceutical exports to UK. | BRCA | BCA>1 for both sectors | Accepted |
| H3 | Macroeconomic, trade, and institutional factors have a significant impact on India's textile and pharmaceutical exports to UK. | GDP Growth, GFCF, ER, REG, FTA, Inflation | All variables come significant but Inflation comes negative | Accepted |
| H4 | Macroeconomic, trade, and institutional factors have a significant impact on FDI | GDP Growth, GFCF, REG, | Positive and significant impact on FDI | Accepted |



| | | | | |
|--|--|--|--|--|
| | in India’s textile and pharmaceutical sectors. | | | |
|--|--|--|--|--|

Source(s): Compiled by Authors

CONCLUSION

The study concludes that India’s textile and pharmaceutical exports to UK have increased significantly during 2000-2025. Among the two sectors, pharmaceutical exports have shown stronger and more stable growth, while textile exports have also improved over time. The BRCA results show that India has a comparative advantage in both sectors in UK market. The advantage is stronger in pharmaceutical, which indicates that India is more competitive in this sector in UK market. Textile exports also show positive competitiveness, although at a lower level than pharmaceutical. The regression analysis shows that factors such as GDP growth, GFCF, exchange rate, regulatory quality and the proposed India-UK FTA have a positive effect on exports and FDI, whereas inflation has a negative effect. This means that better economic conditions, stronger institutions, and improved trade relations help to increase exports and attract more foreign investment. The FDI analysis shows that foreign investment in the textile and pharmaceutical sectors increase when economic growth is strong and policy environment become more favourable. Better institutional quality and smoother trade relations with UK help attract foreign investment in these sectors. Between the two, the pharmaceutical sector is more likely to receive higher FDI because of its strong export performance rising global demand and India’s strength in generic medicines. On the other hand, the textile sector can attract more FDI if it improves productivity and product quality. Economic growth, low inflation, better infrastructure, strong institutions, and higher investment all play an important role in improving exports and attracting FDI. Therefore, policymakers should focus not only on trade agreements but also on improving domestic conditions so that India can get benefit from the India-UK FTA and strengthen its position in UK market.

POLICY IMPLICATIONS

Above findings of study provide several important policy implications. Results show that benefits of exports and foreign investment are not automatic and may not be same in all



situations. In some cases, factors such as investment, exchange rate, and past performance help in improving exports and attracting FDI, while in other cases, policies such as FTA may have negative effects in short-run. Therefore, it is important for policymakers to understand that trade agreements alone are not enough, and proper support is needed to ensure positive outcome. Negative short-term impact of the FTA suggests that industries may face adjustment challenges such as increased competition, strict standards, and uncertainly. To deal with this, government should provide support to firms in form of training, financial assistance, and help in meeting international standards, especially in pharmaceutical sector where regulations are strict. Further, study highlights that investment and infrastructure paly a very important role in improving export performance and attracting foreign investment. This means government should focus on increasing capital formation, improving transport, logistics, and production facilities so that industries can compete better in global market like UK. Since exchange rate conditions also have a strong impact, maintaining a stable and favourable exchange rate environments is necessary to keep Indian exports competitive. At same time, positive effect of past exports and investment show that consistency and long-term relationship are important. Therefore, policies should focus on building strong trade connections, improving product quality, and maintaining reliability in international markets. Another important point is general economic growth and regulatory factors do not have a strong impact in models, which suggests that sector-specific policies are more effective. Government should design targeted policies for textiles and pharmaceuticals, such as export promotion schemes, incentives, and easier access to finance. Improving skill development and technology adoption can also help these sectors grow faster. Overall, while Inia-UK FTA has strong long-term potential, its benefits will take time to fully appear. Therefore, government should not only focus on signing agreements but also on creating a supportive environment that helps industries adjust, compete, and grow in global market.

LIMITATION

The main limitation of the study is that it focuses only on the textile and pharmaceutical sectors and used annual data from 2000-2025. Since, India-UK FTA has not been implemented yet, study cannot show the actual results. Also, study does not include detailed product-level



analysis. Future research can cover more sectors and use more detailed data after India-UK FTA is implemented to provide more accurate and reliable results.

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APPENDIX

Table 11: Summary of Literature review

| Author (Year) | Title | Journal/Publisher | Key Focus | Methodology | Research Gap |
|-----------------------------|--------------------------------|-------------------|----------------------------|---------------|--|
| Balassa (1965) | Revealed Comparative Advantage | Manchester School | Trade advantage concept | Theoretical | Does not explain country-specific or sector-specific application like India–UK trade |
| Rajeev and Mazumdar (2009) | Pharma Efficiency | Int. Journal | Efficiency of pharma firms | DEA/Empirical | Old study, no recent trends or UK-specific analysis |
| Sharma and Prashaant (2009) | Textile Performance | Paradigm | Textile growth post-quota | Analytical | Outdated and not linked to current global trade or UK market |
| Veeramani (2008) | Imported Goods & Growth | Taylor & Francis | Trade openness & exports | Empirical | No focus on specific sectors like textiles/pharma or UK market |
| Sikdar and Nag (2011) | Trade Potential | SAGE | India's trade potential | Gravity model | Does not analyse impact of future FTAs like India–UK |



| | | | | | |
|------------------------------|-------------------------|----------------------|--------------------------|-----------------|--|
| Karmakar and Das (2012) | Trade Liberalisation | Economic Integration | Tariff reduction impact | Analytical | Focus on EU, not UK; no sectoral focus |
| Kumar (2013) | India-UK Trade | SAGE | Bilateral trade trends | Descriptive | No future policy or FTA impact analysis |
| Das and Dubey (2013) | Textile Industry | Emerald | Export potential | Descriptive | No country-specific (UK) analysis |
| Singh and Kaur (2014) | Trade Complementarity | SAGE | Export-import match | Empirical | Does not examine long-term FTA impact |
| Bhattacharya and Das (2014) | Pharma Exports | Emerald | Growth in pharma exports | Empirical | No UK-focused or policy-based analysis |
| Wignaraja (2015) | Economic Integration | Wiley | Trade agreement role | Conceptual | Lacks empirical and India-UK specific evidence |
| Sharma (2015) | Textile Exports | SAGE | MFA impact | Descriptive | Does not include recent trade developments |
| Narayanan and Sharma (2016) | Textile Competitiveness | Taylor & Francis | RCA in textiles | Empirical | No UK market focus |
| Kathuria and Malouche (2016) | Textile Competitiveness | World Bank | Sector development | Policy analysis | No direct link with FTA or UK trade |



| | | | | | |
|-----------------------------|------------------------|--------------------|-------------------------|-----------------|--|
| Banerjee et al. (2016) | Textile Exports | Int. Trade Journal | Competition with China | Empirical | No focus on UK market or FTA |
| Banga and Kumar (2017) | Brexit & Trade | SAGE | India-UK opportunity | Policy analysis | Lacks empirical testing |
| Roy (2017) | Pharma Competitiveness | SAGE | Global pharma strength | Analytical | No UK-specific or FTA-related analysis |
| Dasgupta (2018) | India-UK Trade | Taylor & Francis | Brexit impact | Analytical | Does not include long-term data or sector analysis |
| Ramaswamin and Singh (2018) | Textile Determinants | CSIR | Export drivers | Regression | No UK-specific focus |
| Bose and Chatterjee (2019) | Trade Intensity | Elsevier | Trade performance | Statistical | No future trade agreement impact |
| Kaur and Kaur (2019) | Pharma Growth | Springer | Market diversification | Empirical | No UK-specific analysis |
| Banga (2019) | Brexit Impact | UNESCAP | Trade relations | Policy analysis | Lacks sector-level empirical study |
| Kumar and Ahmed (2020) | Brexit & Trade | Wiley | Future trade prediction | Predictive | No real data testing |
| EXIM Bank (2020) | Pharma Exports | EXIM Report | Export opportunities | Report | General, lacks empirical analysis |



| | | | | | |
|-------------------------|----------------------|------------------|----------------------|---------------|---|
| Bhatia (2020) | UK Competitiveness | Emerald | India in UK market | Empirical | Does not analyse long-term FTA impact |
| WHO (2021) | Global Health | WHO | Pharma supply chains | Report | Not focused on trade competitiveness |
| Das and Pradhan (2021) | FTA Impact | Taylor & Francis | Export performance | Econometric | No UK-specific study |
| Ghosh (2021) | Post-Brexit Trade | EPW | Sectoral growth | Descriptive | Limited empirical evidence |
| TPCI (2021) | India-UK FTA | Report | Trade opportunities | Policy report | Based on projections, not data analysis |
| CATR (2021) | Trade Creation | Report | Market access | Policy | No sector-specific detail |
| UNCTAD (2022) | Trade Report | UN | Global trends | Report | No India-UK specific insight |
| EY India (2022) | FTA Analysis | EY | Sectoral impact | Report | Based on projections only |
| Sharma and Gupta (2022) | FTA Gains | SAGE | Tariff benefits | Analytical | No long-term empirical study |
| CII (2022) | Sector Opportunities | CII | Industry benefits | Report | No statistical validation |
| RBI (2023) | Trade Relations | RBI Bulletin | Trade trends | Descriptive | No deep sectoral or FTA analysis |



| | | | | | |
|-------------------------------|--------------------------------------|-------------|--|------------------------------|---|
| PHDCCI (2023) | Export Potential | Report | Sector growth | Report | Limited detailed analysis |
| NITI Aayog (2024) | FTA Implications | Govt Report | Manufacturing | Policy | Lacks empirical testing |
| Grant Thornton (2024) | Trade Tracker | Report | Trade growth | Industry report | No deep sectoral analysis |
| Inductus Global (2025) | Economic Potential | White Paper | Trade benefits | Projection | Not based on actual data |
| IBEF (2025) | Market Growth | IBEF | Export trends | Report | General overview only |
| Alinea Customs (2025) | Strategic insights into UK-India FTA | Report | Rules of Origin and tariff reduction | Policy analysis | No focus on RBC |
| Agarwal (2025) | Opportunity: UK-India FTA | CaeEdge | Impact on textile and pharmaceutical exports | Descriptive / secondary data | Lack analysis of labour and environment standards |
| Sekhar and Banerjee (2026) | Textile Prospects | Industry | FTA benefits | Projection | Future-based, no empirical proof |

Source(s): Compiled by Authors



WOMEN ON CORPORATE BOARDS: MAPPING THE WAY AHEAD

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ABSTRACT

Contemporary times are witnessing women making their presence felt across domains which were traditionally male-dominated. Women have challenged the strong patriarchal mindset and proved themselves across professions which includes the corporate world. However, despite their rising presence in the corporate world, they continue to remain underrepresented on corporate boards. This underrepresentation has prompted governments across the globe to adopt different strategies to promote gender parity. In India, Section 149(1) was introduced under the Companies Act 2013 to promote gender diversity and inclusivity in corporate governance. This section mandated certain classes of companies to appoint at least one female director. Against this backdrop, the present paper is an attempt to evaluate the role of legislation in ensuring gender diversity on corporate boards and increasing women's representation. The findings based on a survey of 565 insurance sector employees and insights from individuals who have served on corporate boards support legislation through gender quotas as an initial step to improve board diversity. However, they also recognise the need for voluntary approaches like 'comply or explain'. But in the long-term they view merit-based progression as the way forward. The study thus provides practical implications for policymakers and corporate leaders by pointing towards the need to balance regulatory intervention with sustainable approaches to ensure gender parity on corporate boards.

Key words: *genderbias, corporategovernance, insurance, corporateboards, gender parity*



INTRODUCTION

Modern literate societies have witnessed a radical transformation in the role of women. Traditionally, bound by societal constraints and patriarchal norms, the role of women was limited to homes. As societies evolved, an increasing number of women got educated, stepped out of their homes, and made their way to the outside world, including the corporate world. However, progress could not be stretched enough to allow women to reach the boardrooms. The underrepresentation of women on corporate boards has been a longstanding issue (Singh & Vinnicombe 2003; Huse et al. 2009) and a cause of concern for policymakers, researchers and advocates of corporate governance and gender diversity. It has generated increasing concerns in contemporary times, with DEI (Diversity, Equity and Inclusion) becoming the need of the hour.

The extensive literature provides compelling arguments to ensure adequate representation of women on corporate boards, covering a broad spectrum of positive benefits, both financial and non-financial. These benefits include the impact on financial worth, diverse perspectives and skills that women bring to boardrooms contributing to better decisions, besides ensuring better and diverse corporate governance, improving public image, and thereby enhancing the stakeholders' confidence in the organisation. (Adams & Ferreira, 2009; Ahern and Dittmar, 2012; Boubaker et al., 2014; Carter et al., 2003; Carter, D'Souza, Simkins and Simpson, 2010; Dezso and Ross, 2012; Erhardt, Werbel and Shrader, C. 2003; Francoeur C, Labelle and Sinclair Desgagne 2008; Bilimoria, 2000; Eagly & Johnson, 1990; Isidro & Sabral, 2015; Rosener, 1990; Selby, 2000; Billimoria, 2006; Daily and Dalton, 2003; Huse et al. 2009; Huse & Solberg, 2006; Rosener, 1990).

Despite such conclusive arguments and research evidence, organisations still continue to hold on to gender biases and have reservations about having adequate representation of women on corporate boards. However, slowly but gradually, the composition of corporate boards is witnessing a welcome change all across the globe, and women are climbing the corporate ladder. The transition has rarely been voluntary, with most of the countries mandating a certain percentage of women on corporate boards through legislative amendments. However, despite legislation all across, women still remain largely underrepresented (Klettner, Clarke & Boersma



2016). Signalling the presence of deep-rooted patriarchal mindsets (Rao & Tilt, 2016; Sarkar, J, & Selarka; Martin et al., 2008; Mathisen et al., 2013) necessitating legislative authorities and governments to contemplate additional alternative approaches to ensure gender parity.

While the earlier studies have researched the benefits of board gender diversity and the highlighted the effectiveness of legislative measures, little attention has been paid to understanding the perspectives of different stakeholders on the alternative approaches to achieving gender-diverse boards. This is particularly true of the Indian context, which therefore points to the need to examine how the different approaches to promoting gender parity are viewed and whether legislation is considered as a sustainable way for change.

Against this backdrop, the present paper is an attempt to examine the role of legislation towards ensuring gender-diverse boards. Without challenging the efficacy/requirement of the legislation, the paper is an attempt to assess the opinions and understanding of the perspectives across genders on debates prompted by the legislation. The remainder of the paper is structured into the following sections. The first section provides a literature review with due emphasis on the three approaches used across the globe to ensure gender parity. The second section outlines the research design and methodology. The third section concludes the results of the survey, followed by a section that traces the journey ahead, and highlights the limitations of the study.

RESEARCH OBJECTIVES

1. To evaluate the role of legislative measures in promoting gender diversity in Indian corporate boards.
2. To examine stakeholder perceptions regarding the three approaches to improve gender diversity on corporate board's namely coercive, enabling and voluntary approaches.
3. To analyse differences in perceptions between male and female respondents regarding the three approaches.
4. To supplement survey findings with insights from corporate board members and identify long-term pathways towards bringing about gender parity on boards.



LITERARY BACKGROUND

The under-representation of women on corporate boards has been extensively documented in academic literature, providing enough evidence that corporate boards globally are male-dominated (Singh & Vinnicombe, 2003; Huse et al., 2009; Singh, Gagandeep 2020), reflecting an entrenched systemic bias favouring men in leadership roles. It is quite ironic that despite the fact that the literature provides conclusive evidence on the sizable list of financial and non-financial benefits, the representation of women in leadership positions is far from satisfactory. Across the globe, administrative authorities are striving hard to ensure gender parity on corporate boards. A comprehensive analysis of the literature highlights that the efforts towards this goal can be categorised into three categories - coercive legislation, enabling regulation, and voluntary initiatives.

1. The **coercive or legislative approach** is the most rigorous strategy, whereby governments enact laws mandating female representation on boards, compelling companies to comply unequivocally with the prescribed regulations. The extant literature, however, seems ambivalent on this approach. The coercive measures bring with them the advantage of fast-tracking the correction exercise, helping women break the glass ceiling, provide them with a fertile ground to prove their worth, all of which help in influencing the presence of women (Lafley, Vychova & Trnkova, 2023; Piscopo & Muntean, 2018). However, though this approach promises quick and assured solutions, it brings with it its baggage of limitations, challenging its wholeness. The literature opines that in a forced compliance situation, women may not get due credit as they may be perceived just as quota-filling board members, lacking the requisite competence and merit required for that position. (Casey et al., 2011).

Additionally, companies' surging to comply with the mandate has been seen to lead to a sudden rise in demand for women directors, which at times may lead to an insufficient number of qualified or experienced women to justify the position. Such appointments merely to comply with the legislation may lead to unmerited appointments, thereby challenging the existing optimal governance structure (Matsa & Miller 2013; Nygaard 2011). This may, in the long run, even challenge the firm's performance. At times, forced compliance may also alienate those who advocate gender diversity and thus may become a cause for conflicts in the organisation. Occasionally, even women may



become hesitant to accept such positions as it poses a serious challenge to their credibility (Lefley, Vychova & Trnkova, 2023).

Norway was one of the pioneers in mandating gender diversity on corporate boards. In 2006, the Norwegian government passed a law requiring that at least 40% of board members of publicly listed companies be women (DeCabo et al., 2019; Ahern & Dittmar, 2012; Matsa & Miller, 2013., Nygaard, 2011) and as a result, the country achieved full compliance by 2011. This approach was followed by countries like Malaysia and Japan (Catalyst, 2011)

A few years after the legislation, in 2012, Norway experienced a glitch. Around seventy women directors nicknamed "Golden Skirts" were sharing three hundred board positions, leading to a possible clash of interest associated with the multiple memberships. (Rhode & Packel, 2010; Ahern & Dittmar, 2012; Du Plessis, J., O'Sullivan, J., & Rentschler, R.2014; Labelle, Francoeur & Lakhali, 2015). In its entirety, the literature is sceptical about the efficacy of coercive legislation.

The **enabling or regulatory approach** emphasises adherence to governance codes developed by authoritative administrative bodies, such as the Securities and Exchange Commission (SEC) in the United States or the Swedish Corporate Governance Code. Companies can either comply with requirements or explain non-adherence. These governance codes provide a framework for improving corporate practices, particularly in the realm of board diversity. While compliance with these codes is technically voluntary, there is an obligatory component: companies are required to publicly disclose their level of adherence. This disclosure includes details about their policies and practices regarding board diversity, allowing stakeholders to evaluate the company's commitment to inclusivity and diversity.

Several countries including United States, Singapore, South Korea, Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Spain, Sweden, the United Kingdom, and the Netherlands have adopted this approach. The regulatory mechanisms in these countries follow principles which aim to bring in transparency and encourage diversity in corporate governance. By making disclosure mandatory, these regulations make companies take steps to align themselves with the broader goals of equity and inclusion even though there is no legal obligation to do that. (Catalyst 2011; Kirsch 2017)



The **voluntary or laissez-faire approach** allows organisations the autonomy to establish their own targets for female representation without legal mandates. Australia relies on voluntary measures, with organisations encouraged to adopt diversity policies and targets for board representation through initiatives like the ASX Corporate Governance Council's Corporate Governance Principles. Countries like Hong Kong, Canada, Greece, Italy and Taiwan fall into the category of countries which follow this approach. (Catalyst 2011).

To a large extent, the voluntary approach mitigates the challenges posed by the above two approaches. This approach extends enough liberty to organisations to adopt diversity-enhancing measures at their own pace; however, it is a long-driven policy with no assured results. Despite this, it is considered a preferred approach as it allows a gradual increase in the proportion of women directors, thereby empowering the organisations to have the best possible board structure of their own will. (Labelle, Francoeur & Lakhal 2015). Additionally, the gradual implementation process does not disrupt the demand and supply situation. It allows firms with sufficient time and money to train women to meet the growing demand (Labelle, Francoeur & Lakhal 2015).

Besides these three approaches to ensure gender parity, the literature also points towards the futility of the exercise if the number of women on the boards stays below the **critical mass**. As per the Critical Mass Theory (Kanter, 1997a, b, 1987; Granovetter, 1978), the nature of the impact of a group in an organisation depends on whether the group has attained critical mass, whereafter the nature of its interactions with other groups will undergo a change. A number below the critical mass represents a token representation of women who, being in the minority, cannot effectively contribute towards an organisation's functioning. As per Kanter, women in male-dominated environments cannot exert any influence till they acquire the status of a significant minority. As per studies conducted by Asch (1951, 1955; Bond, 2005; Nemeth, 1986; Tanford & Penrod, 1984), the number three represents the tipping point or the critical mass that can influence the larger group.

With enough theoretical rationale and empirical evidence in the literature on the distinct approaches adopted across the globe to ensure gender parity, the following section focuses on India.



THE INDIA PERSPECTIVE

India chose to follow the enabling approach, whereby SEBI instituted a series of legislative measures through notifications over time to foster effective governance practices that were in line with international standards. In 2013, the Companies Act came up with a provision under Section 149(1) mandating the inclusion of at least one woman director on the board of every listed company, with the explicit aim of enhancing gender diversity in corporate leadership roles (Ministry of Corporate Affairs, 2013). The companies had time till 2015 to comply with the regulation. However, the deeply entrenched patriarchal and family-centric dynamics prevalent within Indian corporate culture posed significant hurdles to the effective implementation of these regulatory provisions (Ramaswamy et al., 2000). In practice, many male-dominated Indian boardrooms tended to view the appointment of women directors as a perfunctory exercise aimed primarily at regulatory compliance rather than a genuine commitment to gender diversity and inclusivity. Consequently, the intended impact of the legislation got diluted, and the process of ensuring women's representation on boards became a superficial attempt to avoid potential punitive actions. As a result, female directors found themselves being marginalised within boardroom dynamics, with limited participation in meaningful strategic decision-making processes, thereby rendering their roles symbolic rather than substantive.

To contain such symbolic appointments made with the sole aim of legislative compliance, SEBI issued a mandate in May 2018 stipulating the top 500 listed companies, based on market capitalisation, to appoint at least one woman independent director to their boards by April 1, 2019. This requirement was further extended to include the top 1000 listed entities by April 1, 2020. These measures represent a concerted effort by regulatory authorities to promote greater gender diversity and inclusivity within corporate governance structures, aiming to foster more equitable and effective decision-making processes at the board level (Singh G, 2020).

Table 1 shows the number of women directors in relation to the total number of directors in six listed insurance companies of India.



Table 1: Representation of Women Directors on Boards of Listed Insurance Companies

| Name of Organisation | Total Number of Directors | Number of Women Directors | Nature of Directorship |
|----------------------|---------------------------|---------------------------|---|
| LIC | 15 | 01 | Independent |
| HDFC Life | 09 | 01 | Independent |
| ICICI Lombard | 11 | 01 | Non-Executive, Independent |
| SBI Life | 08 | 01 | Independent |
| ICICI Prudential | 10 | 01 | Independent |
| New India Assurance | 07 | 04 | Chairperson cum Managing Director Director- 02 Director & GM- 01 |

Sources: Co. Websites (February 2024)

Although as per the table all companies have appointed women directors, a closer examination reveals that with the exception of New India Assurance, all the others have appointed only one woman director, suggesting that appointments may be the result of compliance compulsions. To get a more holistic view of the prevailing situation data on the number of women directors in relation to the total number of director data was also collected from non-listed insurance companies (Table 2).

Table 2: Representation of Women Directors on Boards of Non-Listed Companies

| Name of Organisation | Total number of directors | No. of Women Directors | Nature of directorship |
|--|---------------------------|------------------------|-----------------------------------|
| General Insurance Corporation of India | 06 | 02 | 1- Independent 1- MD & CEO |
| PNB Metlife | 16 | 04 | 3- Independent 1-Non-Executive |



| | | | |
|-------------------------|----|----|--|
| Aviva | 09 | 01 | Chairperson |
| Kotak General Insurance | 07 | 01 | Independent |
| Kotak Life Insurance | 10 | 01 | Independent |
| India First Life | 07 | 02 | 1- Independent 1- MD &CEO |
| National Insurance | 04 | 01 | Chairman cum MD |
| Pramerica Life | 09 | 02 | 1-Non- Executive Independent 1- MD & CEO |
| Max Life | 12 | 01 | Non-Executive |
| IFFCO Tokyo | 14 | 01 | Independent |
| Manipal Cigna | 08 | 01 | Independent |
| Reliance Life Insurance | 10 | 01 | Independent |
| Canara HSBC Life | 15 | 02 | Information not available |
| Bajaj Allianz | 14 | 02 | 1- Independent 1 Non-Executive & Non Independent |
| Star Health | 12 | 02 | Independent |
| Bharti Axa Life | 11 | 03 | 2Non-Executive 1 Independent Non-Executive |

Sources: Co. Websites

As the Table shows, all non-listed companies, though not required to comply with the mandate of appointing a woman director, have at least one woman director. Organisations such as PNB Metlife and Bharti Axa Life have more than one, with four and three women directors, respectively.

Though recent years have seen an upward trend in female representation on boards, either voluntarily or due to legislative requirements, it is important to understand the viewpoints of those working in the insurance sector on the debate surrounding legislation.



RESEARCH METHODOLOGY

The extant literature highlights the strengths and challenges associated with the three approaches to ensure gender parity. Limiting the paper to India's perspective, Tables 1 and 2 clearly highlight the number of women directors for both listed and non-listed companies, underscoring that even post-legislation, the situation is far from satisfactory. Without challenging the efficacy or desirability of the legislation, this paper seeks to understand the viewpoints of the stakeholders regarding the ways to achieve gender parity.

RESEARCH PROPOSITIONS

To examine the perspectives in greater depth, three research propositions were developed.

P1. Legislative measures in the form of quotas for women are a desirable way to ensure gender diversity.

P2. Voluntary measures like 'Comply or Explain can be an alternative method to ensure gender diversity

P3. In the long run, merit-based advancement should replace legislation for a sustainable way to achieve gender parity.

These propositions were examined through survey responses which were supplemented by insights from directors.

INDUSTRY SECTOR CHOICE AND RATIONALE

The extant literature on gender diversity has primarily focussed on the banking sector (Anderloni, L., Moro, O., & Tanda, A. 2020), with very fewer studies dedicated to the insurance sector. Although a general study on the financial sector can be more useful, conducting a study focused on a particular sector is equally critical, as the results can extend a better understanding (Adams & Jiang, 2016). Good corporate governance is equally indispensable for the insurance sector owing to its accountability to a large number of stakeholders (Doherty and Dionne, 1993; Lamm-Tennant & Starks, 1993). One of the ways to achieve good governance in this sector, as with all others, is by having a gender-diverse board. However, the extant literature shows that there is very little evidence of female presence on the boards of insurance companies (Anderloni et al., 2020). Tables 1 and 2 provide an accurate, objective assessment of the situation, further justifying the need to focus in entirety on the insurance sector.



SAMPLE AND DATA COLLECTION

The data for the study were collected from employees working in the insurance sector in India, including life insurance, general insurance, health insurance, and insurance broking companies. To ensure a wide range of opinions, the sample included all employees from the middle management to the board level, irrespective of their functional areas and gender. The study adhered to ethical guidelines, including voluntary participation, confidentiality and anonymity of the respondents to ensure accurate and truthful responses.

A Google form was administered to 700 individuals working in the insurance sector using convenience sampling. A seven-point Likert scale was used (1 = strongly disagree, 2 =somewhat disagree, 3 = disagree, 4= neutral, 5 = strongly agree, 6= somewhat agree and 7=agree).

From the target population of 700 respondents, 565 responses were received, indicating a response rate of approximately 80 per cent. During data cleaning, no invalid responses were found, so all the responses were retained for further analysis. The participants' ages ranged from 25 to 62.

Besides this, the authors sought the insights from 12 individuals, comprising both men and women (Appendix 1) with extensive experience of serving as Directors on distinguished corporate boards. Their responses were collected through a structured Google questionnaire comprising 12 open-ended questions.

RELIABILITY AND VALIDITY

The survey results were subjected to a Reliability Test, a statistical tool that helps measure the consistency of responses over time. The most commonly used measure to assess internal consistency is Cronbach Alpha. A higher alpha value (0.7 or higher) indicates better reliability. The Cronbach Alpha of all three variables using IBM SPSS 22 was higher than the threshold limit of 0.7, indicating the data have good internal consistency (Appendix 2).

RESULT ANALYSIS

Considering the exploratory nature of the study and the objective of understanding stakeholder perceptions, descriptive analysis using percentage method was used to study the response patterns. The findings are presented using percentage distributions and graphical representations.

- i. The findings reveal that more than half the respondents expressed their agreement with the need to have quotas for women. This is in line with the existing studies which also highlight the desirability of legislation as it ensures assured results in a much shorter time. Figure 1 showcases the results of the 565 responses through a pie chart.

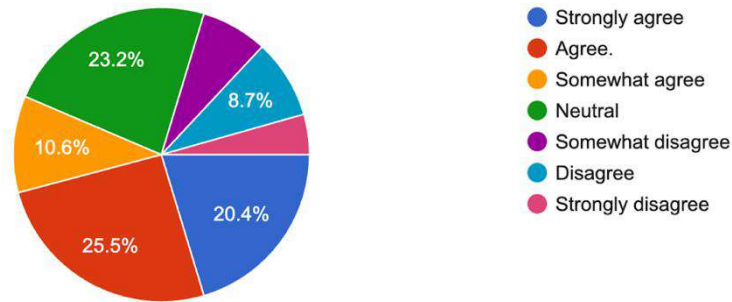


Figure 1: To bring gender diversity, government should fix quotas for women

A gender-based analysis was carried out to understand the difference in the male and female perceptions regarding the desirability of fixing quotas.(Table 3).

Table 3: Analysis of Responses based on Gender

| | Female | Male |
|-------------------|------------|------------|
| | Percentage | Percentage |
| Strongly Disagree | 3% | 5% |
| Disagree | 7% | 9% |
| Somewhat disagree | 8% | 7% |
| Neutral | 23% | 24% |
| Somewhat Agree | 12% | 10% |
| Agree | 23% | 27% |
| Strongly Agree | 24% | 19% |



The gender-based analysis reveals a similarity in views between the genders. This points towards a societal shift with an appreciation for the role of women and the recognition of the need to provide them with a level playing field.

The survey findings are supported by the company directors, who also agree with the need to initially fix quotas for women to bring them at par with men. Table 4 summarises the most relevant opinions on the subject.

Table 4: Opinions of Directors on the desirability of legislation

| Name | Gender | Opinion |
|-------------------|--------|--|
| Deep Kalra | Male | <i>“Legislation is definitely the first desired step as its mandatory nature shall present an equal opportunity to a section or strata of society which has been at a disadvantage at some point in our history.”</i> |
| Nitin Atroley | Male | <i>“I support legislation as a starting point.”</i> |
| Gagan Makar Singh | Female | <i>“There is a boy’s club and comfort zone there, and men choose people like themselves; hence, legislation is definitely a move in the right direction.”</i> |
| Shalini Arora | Female | <i>“Deep-rooted cultural change needs strong intervention to correct the course and build a path of parity. To support this, focused policies and strong legislation are the need of the hour. I believe that these steps are now imperative to see the change we would like to see and to ensure we have the right presence of women in the workplace and in leadership roles on the executive boards”.</i> |
| Ravindra Dhariwal | Male | <i>“Legislation is a necessary condition to start the process of better balance”.</i> |
| Shalini Sarin | Female | <i>“Legislation is only a starting point and is absolutely essential till we reach a balance of 50:50 or near about”.</i> |

(The opinions stated in the above table have been included in the paper after seeking due permission from the concerned individuals.)

The survey results, coupled with the opinions of the directors, clearly show the desirability of fixing quotas for women as a starting point to ensure gender parity. This proves that strict legislative measures need to be undertaken by the authorities to break the present structure.

- ii. The literature has endorsed voluntary measures like ‘Comply or Explain’ over coercive legislation. The findings of the current study (Figure 2), are in congruence with earlier literature, with approximately 70 per cent of the respondents expressing their agreement with the need to adopt voluntary measures for gender parity.

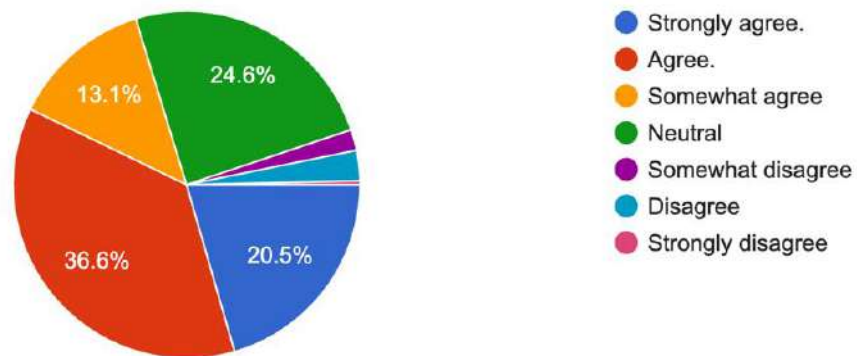


Figure 2: Instead of quotas, the government should opt for voluntary measures like ‘Comply or Explain’

The analysis of the responses based on gender, as shown in Table 5, showed that the views are consistent regardless of gender.

Table 5: Analysis of responses based on gender

| | Female | Male |
|-------------------|------------|------------|
| | Percentage | Percentage |
| Strongly Disagree | 0% | 1% |
| Disagree | 3% | 3% |
| Somewhat disagree | 3% | 2% |
| Neutral | 22% | 26% |
| Somewhat Agree | 12% | 13% |
| Agree | 38% | 36% |

The views of the directors are also in agreement with the survey results. Nitin Atroley, with a total experience of 8 years as Director to his credit though supported legislation as a starting point, comments that incentives/penalties to corporates need to be imposed based on minimum gender ratio in top management.” Sandip Das, with an 18 years of experience as Directors on

different boards goes a little tough and comments that “*some companies are still stuck in time and continue to harbour biases. Penalties need to be imposed now for sure.*”

- iii. As far as the future is concerned, majority of the respondents were in favour of merit replacing quotas in the long run.

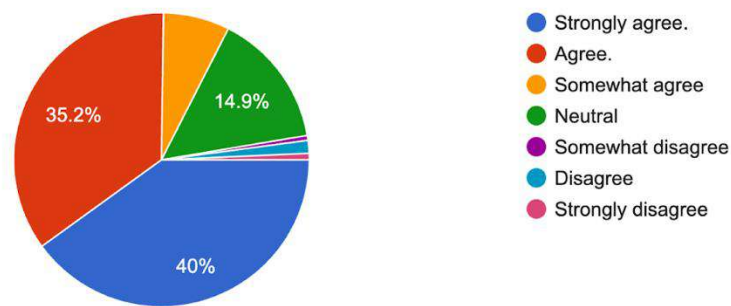


Figure 3: In the long run, quotas should be replaced with merit

The analysis of the responses based on gender, as shown in Table 6, showed that the views are consistent regardless of gender.

Table 6: Analysis of responses based on gender

| | Female | Male |
|-------------------|------------|------------|
| | Percentage | Percentage |
| Strongly Disagree | 1% | 1% |
| Disagree | 2% | 1% |
| Somewhat disagree | 1% | 1% |
| Neutral | 11% | 16% |
| Somewhat Agree | 7% | 8% |
| Agree | 40% | 33% |
| Strongly Agree | 38% | 41% |

The most debated topic on gender parity is the need for merit to replace quotas in the long run. The findings indicate a relatively strong support for merit-based advancement with more women being in support of the proposition.



Ravindra Dhariwal, with 20 years of experience as director of different boards, strongly feels that *“Merit will gradually complement legislation — it will take a decade or more for merit to be the main yardstick for Board membership.”* Merit-based appointments of women directors will challenge the deep-rooted gender stereotypes and shake the deep-rooted patriarchal system. It will provide a sustainable solution wherein gender parity will make its own way.

In entirety, the results show that though the respondents and the distinguished board members have faith in the desirability of the legislative measures to correct the gender disparity on corporate boards, they do equally support the notion of merit to finally take over as a reason for climbing the ladder. As Deep Kalra says *“without undermining the importance of legislation, the need of the hour is to work towards creating a more sustainable system, which beats the need for legislation in the long run”*.

THE ROAD AHEAD

With sufficient literary evidence to endorse that diversity is rewarding, both financially and non-financially, the long-held gender stereotypes still continue to prevail, impeding women's journey to the top leadership positions. There has been a global recognition of gender disparity on corporate boards, and legislative authorities all across have resorted to different practices to correct the situation. In the Indian context, the reality is disappointing, as even after an amendment in the Companies Act under section 149(1), there is only a token representation of women on boards just to comply with the legislative requirements. This has downplayed the very purpose of the legislation and has led to the appointment of women directors who lacked independent opinions, thus defeating the spirit behind the legislation. This substantiates that though mandating a certain number of women on corporate boards was vital considering the deep-rooted patriarchal system, mere regulation does not prevent women's systematic exclusion from positions of power (Piscopo & Clark Muntean, 2018). Hence, societies striving to have a fair representation of women across different spheres would require approaching the problem with much stronger interventions.

The global efforts by governments to promote gender diversity in corporate boardrooms have sparked scholarly interest in identifying the most effective approach, with each approach



having its baggage of advantages and disadvantages. The findings of the study suggest a relatively greater support for merit-based advancement replacing quotas in the long run. However, this transition cannot be achieved in isolation and requires both organisations and women to help create conditions that will enable women to participate more meaningfully in leadership roles.

Women need to challenge gender stereotypes more actively and move beyond being silent spectators in the boardrooms to contribute actively and make their voices heard and respected. However, the task is not as easy as it sounds. The journey is tough, though it can be eased with educational and social empowerment. However, the notion of meritocracy has its own challenges, given the level of harassment and rejections they face throughout their journey from homes to boardrooms. Hence, it becomes imperative for legislators to step in and mandate gender representation on boards to deal with the social stigma and break the glass ceiling firmly. Societies have to mature and lend an extended welcome to this deserving yet long-deprived section of society to prove their worth. This shall not only empower women but also help strengthen the supply side to ensure a large pool of deserving women ready to take on these coveted positions, as the scarcity of women in the executive pipeline is one of the main reasons male CEOs cite for a shortage of women at top levels.

Table 7 summarises the opinions of directors on the efforts required to bring and sustain gender parity on corporate boards.

Table 7: Opinion of Directors on the Road to Gender Parity

| Name | Gender | Opinion |
|-------------------|---------------|---|
| Gagan Makar Singh | Female | <i>“Men, women and society need to play their roles in increasing the pace. We have to reach a stage when a board member is selected because of expertise, skill, experience etc and not gender or even sexual preference”.</i> |
| Shalini Arora | Female | <i>“We require continued focus on ensuring we have the right legislation support and financial aid to cover early, mid and later career journeys for a woman. This would mean investment in the education of the girl child, opportunities for upskilling and women development programs, practices to support women in the workforce</i> |



| | | |
|---------------|--------|---|
| | | <i>and policies to support women leadership including presence in the Executive Boards .”</i> |
| Sandip Das | Male | <i>“I am convinced that things are moving in the right direction and gathering momentum . However gender ratios cannot be improved by legislation alone . Parallely societal and cultural changes have to be rapid , increased efforts must be put in all around to groom and build a pool of potential candidates while the simultaneous rise of women in organisational ranks will automatically correct the situation. ”</i> |
| Celine George | Female | <i>“In my view the focus most of the time has been on enabling women's presence on boards through legislation or capability building, whereas to make a real difference, interventions should be at the societal level and in organisations so men learn to be comfortable working with women.” professionals.”</i> |
| Deep Kalra | Male | <i>“Though legislation can be viewed as an immediate solution, bringing attitudinal change is required for a far-reaching and permanent change. Such a change shall not only reduce resistance to legislation and ensure its acceptance in both letter and spirit but shall also ease the process of improving gender ratios”.</i> |

(The opinions stated in the above table have been included in the paper after seeking due permission from the individuals.)

The past few decades have witnessed legislation as being viewed as a quick and assured solution to make corporate boards gender diverse. This has yielded positive results. However, looking beyond the brighter side reveals that though it compelled organisations to have a minimum number of women as directors, at times, it compromised merit in addition to defeating the very purpose of diversity and inclusion in its true spirit. Addressing this gender disparity requires multifaceted interventions, encompassing targeted diversity initiatives, policy reforms, and cultural shifts within organisations. Additionally, fostering awareness of unconscious bias and challenging gender stereotypes is crucial for creating more inclusive corporate environments conducive to gender parity in leadership roles. As the future unfolds, more mature, progressive, holistic and assertive initiatives shall be needed to supplement legislation so that societies renounce legislation in favour of merit.

Like all other studies, the present study is also limited by its scope. Its generalisation has been limited by opinions solicited only from employees of the insurance sector. Future studies encompassing different sectors can provide more conclusive results.



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APPENDIX 1
LIST OF DIRECTORS SURVEYED

| S. No | NAME | GENDER | NAME OF ORGANISATION | BOARD EXPERIENCE (in years) |
|--------------|------------------------|---------------|---|------------------------------------|
| 1 | Ms Gagan Makar Singh | Female | Independent Director | 16 |
| 2 | Ms Sheila Vasan Singla | Female | Managing Director, Chrysallis India | 20 |
| 3 | Ms Shalini Arora | Female | Head of Business, Natwest Group | 06 |
| 4 | Ms Shalini Sarin | Female | Independent Director | 13 |
| 5 | Mr Deep Kalra | Male | Founder & CEO, MakeMyTrip.com | 22 |
| 6 | Mr Nitin Atroley | Male | Partner, KPMG India | 08 |
| 7 | Mr Sandip Das | Male | Board Director & Former CEO | 18 |
| 8 | Mr Ravindra Dhariwal | Male | Independent Director | 20 |
| 9. | Mr Rajeev Bakshi | Male | Senior Corpoarte Professional, Ex Cadbury India | 20 |
| 10. | Ms Nidhi Modi | Female | Founder & CEO, Mamily | 20 |
| 11. | Ms Celine George | Female | Anonymous | 03 |
| 12. | Mr Sanjay Kapoor | Male | Business Leader & Entrepreneur, Ex-CEO Bharti Airtel Ltd. | 25 |



APPENDIX 2

CRONBACH VALUES

| S.No. | Variable | Cronbach Alpha |
|-------|---|----------------|
| 1. | To bring gender diversity, the government should fix quotas for women. | 0.71 |
| 2. | Instead of quotas the government should opt for voluntary measures like Comply or Explain | 0.86 |
| 3. | In the long run, quotas should be replaced with merit. | 0.74 |



**WOMEN, WORK, AND LEADERSHIP:
EXAMINING THE ROLE OF FAMILY-FRIENDLY POLICIES**

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ABSTRACT

“Think leader, think male”, “career is fundamentally a male thing”, and many more... Despite gradual increases in the presence of women in the workforce and in leadership positions, these stereotypical notions hinder the career advancement of women worldwide. Women also face other structural and cultural barriers, such as informal networks, the motherhood penalty, and biases in recruitment, performance assessment and promotion. These obstacles create an invisible glass ceiling for women, resulting in their underrepresentation in top positions globally, especially in India. Being a patriarchal society, women in India often prioritise family over career, make sub-optimal choices in their life and career that may limit their chances to reach top management positions and boards. Although family-friendly policies have been implemented to ease the dual burden faced by women and support their career progression, research on the effectiveness of these policies is limited and mixed. The present study, based on primary survey of 253 female employees from companies of Delhi/ NCR region, explores the impact of family friendly policies on the career advancement of women to top management positions and boards. Career advancement of women to top management positions and boards has been measured using dichotomous variables indicating women’s presence at these levels, (coded “0” for 0-10% and “1” for Above 10%), based on the participants’ knowledge of their organisations. Binary logistic regression was applied for data analysis. The study found that only day care services and sabbaticals facilitate the women’s career progression to top, whereas maternity leave and flexible hours hinders it, due to negative notions tied to these policies. The findings highlight the need for systemic and cultural changes within organisations as well as society to fully leverage the benefits of family-friendly policies for women’s career advancement.



Keywords: *Family Friendly Policies, Career Advancement, Societal Barriers, Women on Top Positions*

INTRODUCTION

Despite gradual improvement, no country enjoys full gender parity yet and even the top 10 economies have closed only 80% of their gender gaps. If we progress at the current pace, achieving full parity will take around 132 years (World Economic Forum 2022). As per Global Gender Gap report 2024, the global gender gap has been closed by 68.5% (100% means gender parity) 31.5 % still remains. Gender equality is crucial for human development and it affects jobs, productivity, GDP growth, and sustainable development of a country (Woetzel et al. 2015).

India holds 129th rank globally and 5th rank regionally, closed the gender gap by 64.1%, only (World Economic Forum 2024). The proportion of women in paid work and leadership positions has been increased gradually over the years but societal expectancies, company policies, regulations and care infrastructure still affects women' educational and career progress. At global level, the proportion of women appointed in leadership positions rose to 36.9% in 2022 from 33.3% in 2016, however industries like Energy (20%), Manufacturing (19%) and Infrastructure (16%) still have wider gender gaps in the leadership positions (World Economic Forum 2022).

With initiatives of various stakeholders, women's share in professional, technical, and leadership roles improved over time in India. The proportion of women in professional and technical roles was 32.9% in 2022, which further reduced to 17.10% at the board level (Vohra 2020; World Economic Forum 2022).

The underrepresentation of women on the top positions is one of the challenges organisations face in today's scenario, which cannot be ignored as gender diversity has its own benefits (Thomas et al. 2020). Companies with higher representation of women on top-tier positions show better financial performance (Bagati and Carter 2010), boards become more active, effective (Handa and Singh 2013; Carter, Simkins, and Simpson 2003), firm value improves (Sarkar and Selarka 2016), and interests of all stakeholders are considered (Kramaric and Miletic 2017).



Review of literature shows that the number of women are fewer as they rise up the career ladder, commonly known as “leaky talent pipeline” (Catalyst 2020). This low percentage may be attributed to glass ceiling barriers women encounter in their career journey. Glass ceiling barriers diverge across countries and sectors. Different authors and organisations have classified these barriers differently. Ismail and Ibrahim (2008) categorised glass ceiling barriers as family, societal, and organisational barriers. Lathabhavan and Balasubramanian (2017) grouped them as personal factors, situational/organisational factors, social role factors, interaction-related factors, human capital and preference factors.

Research suggests that family-friendly policies such as day care, parental leave, flexible work schedule etc. tend to reduce the dual burden of female employees and facilitate their career advancement. Several organisations and governments have taken the necessary steps too but as the literature suggests, studies shown mixed impact of the family friendly policies on the career progression of female as well as male employees (Schwartz 1996). The present research aims to check the impact of family friendly policies like maternity leave, day care, work from home, flexible hours and sabbatical on the presence of women on top management positions and boards using a primary survey of 253 female employees in Delhi/NCR region. This study is divided into seven parts. The first section introduces the topic and its importance followed by review of literature. Objectives and research methodology of the study are given in third and fourth sections respectively. The fifth section reports the study findings and their interpretation followed by discussion and conclusion. Last section discusses the limitations and future scope of the study.

REVIEW OF LITERATURE

Women across the world encounter numerous obstacles in their career journey but some are more protuberant in countries like India, because of its patriarchal culture.

SOCIETAL BARRIERS AND INDIVIDUAL BARRIERS

As advocated by **Social Role theory** (Reavley 1993), societal barriers are critical in the career progression of women. Men and women differ biologically and society also expects them to play



roles accordingly. Men are more associated with the role of income provider whereas women are more associated with the role of caretaker (Konrad et al. 2000). These gender specific notions are the results of the socialisation process during childhood stage through which men and women form their attitudes, beliefs, personality, perceptions and expectations (Amudha et al. 2016; Taparia and Lenka 2022a; Reavley 1993). Due to this, women are expected to play gender specific roles like the role of homemaker and caretaker. The stereotypical attitudes which are developed by both men and women during their socialisation process often influence how people behave in their workplace (Nilufer Azeez and Priyadarshini 2018). Over time, women internalise these gender specific roles and prioritise family and child care responsibilities over career. As a result, they make suboptimal choices throughout their careers, like opting for less demanding jobs, leaving jobs or shifting to part time jobs. Women also face the difficulties of dual burden while managing the family and job at the same time (Saxena et al. 2009; Landry et al. 2020).

These types of social and cultural stereotypical attitudes influence the personal characteristics of women which results into a lack of self-confidence about their abilities and qualifications (Nilufer Azeez and Priyadarshini 2018; Taparia and Lenka 2022a) and affect the decisions taken by the organisations as well. The leadership styles and behaviour also differ across both the genders, and women are considered less suitable for leadership roles due to their traits which leads to the glass ceilings for women (Kiaye and Singh 2013; Akande 1993; Reavley 1993).

ORGANISATIONAL BARRIERS

Societal barriers and individual barriers are further strengthened by organisational barriers creating roadblocks for women and lead to underrepresentation of women on senior leadership positions (Reavley 1993; Landry et al. 2020). Women experience **discrimination** in various aspects of their careers, including recruitment, salaries, and promotion (Cooper Jackson 2001; Tripathy 2018).

The **Situation/ Organisation theory** explains the workplace environment encountered by women employees (Kiaye and Singh 2013). In many companies, women often face hostile work environments and demoralising corporate culture characterised by lack of recognition, respect and support from their male counterparts (Amudha et al. 2016; Rath, Mohanty, and Pradhan 2019).



Literature also confirms that women are excluded from informal networks, as they lack time to socialise after work, whereas men derive gains through socialising informally after work (Hurn 2013; Chawla and Sharma 2016).

To ease the double burden of women and facilitate their career progression to higher positions, several studies suggest the provision and implementation of family friendly policies for women and other employees (Amudha et al. 2016).

FAMILY FRIENDLY POLICIES

Family friendly policies are also referred as work-life or flexi-work policies; include a wide variety of policies and flexible arrangements like leave from work, alternative work options, assistance for child care. Leaves from work consists maternity leave, parental leave and sabbatical leave etc. Alternative work arrangements include telecommuting and work from home (spatial flexibility), flexible hours, and flexibility related to workloads like job sharing etc. These policies aim to ease the work-family conflicts faced by both women and men and facilitate their career journey. Extant research focused on the organisational level impact of family friendly policies like employee retention, improved productivity and performance, however there is dearth of research on how these policies affect the career advancement of employees. Some studies shown that despite availability of work-family support, female employees continue to face the difficulties of managing the job and home across all the countries. Some studies even show mixed results on the life and career of employees (Taparia and Lenka 2022b; Schwartz 1996).

Due to India's different cultural set-up, the relevance of exploring the effect of family friendly policies on the career progression of women in India is crucial as women here face different personal situations as compared to women in other parts of the world. Identifying this research gap, the present research aims to check whether family friendly policies provided by the employer help women employees to rise to the top management and boards positions or not. Next section presents the objectives of the present study.



OBJECTIVES OF THE STUDY

The main aim of the study is to check the impact of family friendly policies on the career advancement of women to top management positions and corporate boards to explore whether family friendly policies hinder or facilitate career progression of women to top management positions and corporate boards.

RESEARCH METHODOLOGY

Data was collected through snowball sampling technique from male and female employees working at various levels in Delhi/NCR companies. Final sample includes 509 responses out of which a subset of only female employees (n=253) was used for this study. A reliable and valid scale was used (Sunita and Jhunjhunwala 2023). Presence of women at top- management and board levels, were measured as binary dependent variables (both variables measured using dichotomous categories, coded “0” for “0-10%” and “1” for “Above 10%”). Impact of five family friendly policies – maternity leave, day care, work from home, flexible hours and sabbatical (measured as nominal categories, coded “0” for “Not Available”, “1” for “Available, Not Availed”, and “2” for “Available & Availed”) – was assessed using the binary logistic regression. The period of the study was from September 2021 to May 2022. Survey aims at exploring the respondents’ perceptions towards barriers and enablers for women’s career progression. Data analysis was done using MS. Excel and SPSS Version 25.

HYPOTHESES OF THE STUDY

H₁: There is no significant impact of “Maternity Leave” on the presence of women on top management.

H₂: There is no significant impact of “Day Care” on the presence of women on top management.

H₃: There is no significant impact of “Work from Home” on the presence of women on top management.

H₄: There is no significant impact of “Flexible Hours” on the presence of women on top



management.

H₅: There is no significant impact of “Sabbatical” on the presence of women on top management.

H₆: There is no significant impact of “Maternity Leave” on the presence of women on Boards.

H₇: There is no significant impact of “Day Care” on the presence of women on Boards.

H₈: There is no significant impact of “Work from Home” on the presence of women on Boards.

H₉: There is no significant impact of “Flexible Hours” on the presence of women on Boards.

H₁₀: There is no significant impact of “Sabbatical” on the presence of women on Boards.

DATA ANALYSIS AND FINDINGS

The sample is diverse in terms of their age, marital status, children and their status, education, designation level and experience. Table 1 presents the sample descriptions. Table 1 shows that around half of the females are married (49.8%) and with 46.6% unmarried. Most are under 30 years of age (55.3%) followed by those aged 30-45 years (34.4%) and 46-60 years (10%). Around 32% females have one or more children, while 67.6% have none. Majority of the females hold middle designation levels (54.2%), with fewer in lower (27.7%), top management (13%), and Board (5.1%) levels.

Table 1: Sample Description (n=253)

| Basis | Divisions | Fre. | % | Basis | Divisions | Fre. | % |
|-----------------------|-----------|------|------|--------------------------|----------------------|------|------|
| Marital status | Unmarried | 118 | 46.6 | Designation Level | Top/Upper Management | 33 | 13.0 |
| | Married | 126 | 49.8 | | Board | 13 | 5.1 |
| | Other | 9 | 3.6 | | | | |



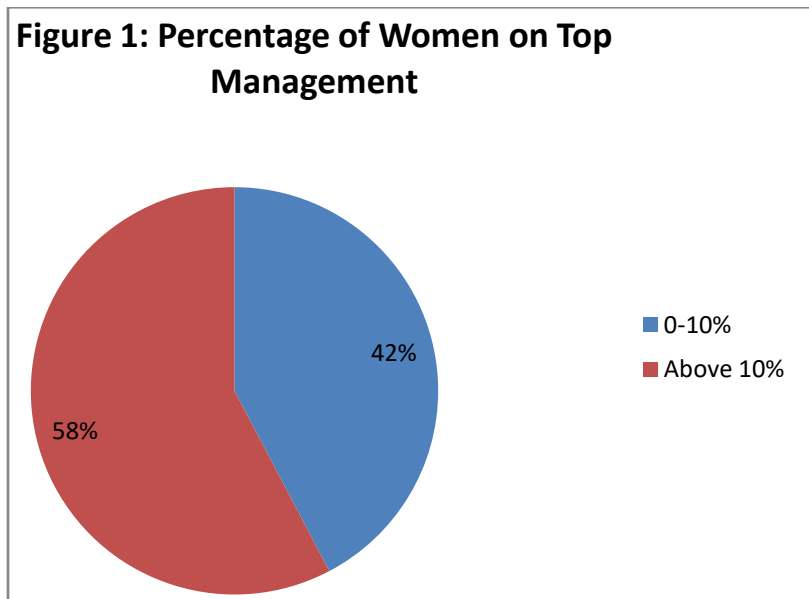
| | | | | | | | |
|--------------------------|----------------------------|-----|------|---------------------------|---------------------|-----|------|
| Age | Below 30 Years | 140 | 55.3 | No. of Children | 0 | 171 | 67.6 |
| | 30-45 Years | 87 | 34.4 | | 1 | 48 | 19.0 |
| | 46-60 Years | 25 | 9.9 | | 2 or more | 34 | 13.4 |
| | Above 60 Years | 1 | 0.4 | | | | |
| Education | Graduate | 96 | 37.9 | Status of Children | All are dependent | 56 | 22.1 |
| | Post Graduate | 106 | 41.9 | | All are independent | 15 | 5.9 |
| | Professional Qualification | 43 | 17.0 | | Some are dependent | 8 | 3.2 |
| | Other | 8 | 3.2 | | Not applicable | 174 | 68.8 |
| Designation Level | Lower | 70 | 27.7 | Experience | Below 5 Years | 130 | 51.4 |
| | Middle | 137 | 54.2 | | 5-10 years | 57 | 22.5 |
| | | | | | 11-15 years | 32 | 12.6 |
| | | | | | Above 15 years | 34 | 13.4 |

Source: Researcher's contribution, Note: Fre. –Frequency, % - Percentage

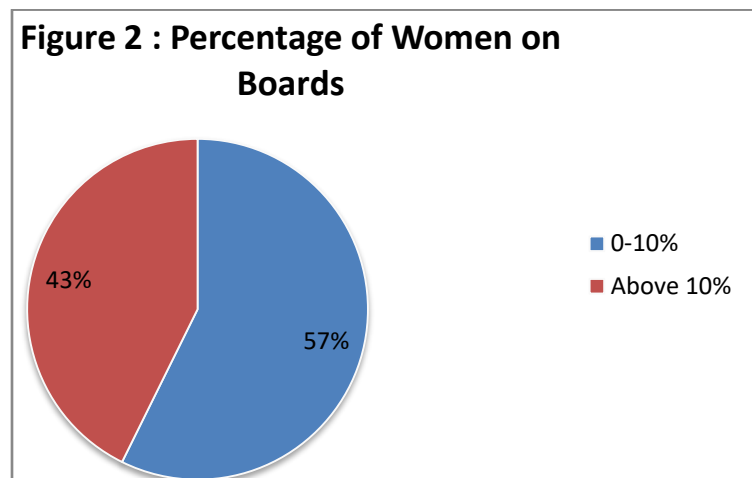
WOMEN'S PRESENCE IN TOP MANAGEMENT AND BOARDS

Data analysis shows that 58% of respondents confirmed that women in top management comprise 0 to 10%, while 42% said that presence of women is above 10%. Figure 1 depicts the women's

presence at the top management. As literature suggests that women face a leaky talent pipeline and their proportion decreases as they move up the career ladder.



Source: Researcher's contribution



Source: Researcher's contribution



Figure 2 presents the presence of women on boards. It is shown that majority of females (57%) agree that the presence of women on boards lies between 0-10% and only 47% think that the percentage of women on boards is above 10%. This confirms the existing literature that women are underrepresented on top positions and boards.

IMPACT OF FAMILY FRIENDLY POLICIES ON THE PRESENCE OF WOMEN ON TOP POSITIONS

Binary Logistic regression was conducted to check the impact of family friendly policies (FFPs) – maternity leave, day care, work from home, flexible hours and sabbatical – on the presence of women at top management and boards to check whether these can significantly predict the chances of women to rise above 10% or not. Assumptions of the logistic regression were checked and found satisfied. Presence of outliers and multi-collinearity between the independent variables were also not found.

IMPACT ON THE PRESENCE OF WOMEN AT TOP MANAGEMENT

Table 2 presents logistic regression results. Two models for FFPs impacting the presence of women at the top management level are given in Table 2. The Omnibus Tests of Model Coefficients is used to assess whether the new model with predictor variables is better as compared to the null model (only constant). Significant Reduction in -2LL value in the new model as compared to null model confirms that the new model is explaining more of the variance in the outcome and is an improvement over the null model. Table 2 shows that in Top Mgmt. Model 1, in which all five independent variables are entered is statistically significant as Omnibus Test is significant with $\chi^2 = 19.48$, $df = 10$, $p < 0.05$. Log likelihood statistics (-2LL) for Model is 325.216. In this model we fail to reject null hypotheses H_1 and H_4 as p values are greater than 10% significance level, Maternity leave and flexible hours do not have significant impact on the presence of women at the top management level,

We rejected the null hypotheses H_2 ($p < 0.10$), H_3 ($p < 0.10$) and H_5 ($p < 0.05$) partially. By observing the beta coefficients in Top Mgmt. Model 1 (Table 2), we have found that, day care and sabbatical



have a positive and significant, whereas work from home has significant and negative impact on presence of women at the top management. By observing the odd ratios in Model, it can be said that Day care if available but not availed there are 1.757 times (76%) more chances than non-availability of day care, that presence of women at top management will be above 10%. However no significant effect was observed if the day care is available and availed by the females. Similarly sabbatical if available and availed by employees there are 3.185 times (218%) more chances than non-availability of sabbatical that women’s presence at top management will rise above 10%. No significant impact was seen if the sabbatical is available but not availed.

Table 2: Logistic Regression Results (Impact of FFPs on the Presence of Women at Top Management Level)

| Variable | | Top Mgmt. Model 1 | | | Top Mgmt. Model 2 | | |
|---|---------------------------|-------------------|-------|-------|-------------------|-------|-------|
| | | B | SE | OR | B | SE | OR |
| Constant | | 0.458 | 0.333 | 1.580 | 0.315 | 0.295 | 1.370 |
| Maternity Leave (Base= Not Available) | Available, Not Availed | -0.157 | 0.343 | 0.855 | -0.214 | 0.337 | 0.807 |
| | Available, Availed | 0.354 | 0.471 | 1.424 | 0.172 | 0.456 | 1.188 |
| Day Care (Base= Not Available) | Available, Not Availed | 0.563* | 0.338 | 1.757 | 0.675** | 0.330 | 1.964 |
| | Available, Availed | 0.333 | 0.699 | 1.395 | 0.333 | 0.697 | 1.395 |
| Work from Home (Base= Not Available) | Available, Not Availed | -0.084 | 0.400 | 0.919 | - | - | - |



| | | | | | | | |
|--|--------------------------|-------------------------------|-------|-------|------------------------------|-------|-------|
| | Available, Aailed | -0.690* | 0.411 | 0.502 | - | - | - |
| Flexible hours (Base= Not Available) | Available, Not Aailed | -0.126 | 0.396 | 0.882 | 0.057 | 0.346 | 1.059 |
| | Available, Aailed | -0.492 | 0.378 | 0.611 | -0.752** | 0.345 | 0.471 |
| Sabbatical (Base= Not Available) | Available, Not Aailed | 0.115 | 0.334 | 1.122 | -0.079 | 0.308 | 0.924 |
| | Available, Aailed | 1.158** | 0.531 | 3.185 | 0.996* | 0.515 | 2.708 |
| (-)2LL | | 325.216 | | | 328.327 | | |
| Omnibus Tests of Model Coefficients | | $\chi^2=19.48, df=10, p<0.05$ | | | $\chi^2=16.37, df=8, p<0.05$ | | |
| Hosmer & Lemeshow test | | 0.025 | | | 0.248 | | |
| Classification Accuracy | | 61.7% | | | 61.7% | | |

Source: Outcome of Research; *p < .10; **p < .05; ***p < .01

Opposite to this effect, odd ratios tell that if work from home is available and aailed then it is 0.502 times (49.8%) less chances that presence of women at top management will be above 10% than non-availability of work from home. However if work from home is not aailed, then there is no significant impact on the presence of women at top management level. It is not a good fit to the data as $p=0.025 (<0.05)$ for Hosmer & Lemeshow test. Top Mgmt. Model 1 correctly classifies 61.7% cases as compared to 57.7% cases in the no variable model.

In Top Mgmt. Model 2 (Table 2), one variable (work from home) was dropped to improve the overall fit of the model and impact of other four variables has been checked on the presence of



women in top management. This second model is statistically significant as Omnibus Test is significant with $\chi^2 = 16.37$, $df = 8$, $p < 0.05$. Log likelihood statistics (-2LL) for Model is 328.327. Based on statistics we failed to reject null hypothesis H_1 , hence it has been identified that maternity leave do not significantly impact the presence of women in top management. Based on their p values we have rejected the null hypotheses $H_2(p < 0.05)$, $H_4(p < 0.05)$ and $H_5(p < 0.10)$ partially. The beta coefficients in Top Mgmt. Model 2 indicate that out of the four predictor variables, Flexible hours have a significant and negative impact, whereas day care and sabbatical have a significant and positive impact on the presence of women at top management. Odd ratios provide evidences that day care if available, but not availed there are 1.964 times (96%) more chances than non-availability of day care, that presence of women in top management will be above 10%. No significant effect of availing the day care facility was seen on the presence of women at top management. Sabbatical if available and availed by employees there are 2.708 times (170%) more chances than non-availability of sabbatical that women presence in top management will rise above 10%. No significant impact of not availing the facility was seen. Opposite to day care and sabbatical, flexible hours if available and availed then there are 0.471 times (52.9%) less chances that women in top management will be above 10%. Availing the flexible hours facility does not impact the presence of women in top management significantly.

Top Mgmt. Model 2 is a good fit to the data as $p = 0.248$ (> 0.05) for Hosmer & Lemeshow test. It correctly classifies 61.7% cases. Overall Statistics show that it is an improved model over Top Mgmt. Model 1 and was used finally to derive meaningful findings about the FFPs impacting the presence of women in top management positions.

In the next section we check the impact of the family friendly policies on the presence of women on boards.

IMPACT ON THE PRESENCE OF WOMEN AT BOARD LEVEL

Binary Logistic regression was applied to assess whether the family friendly policies have the ability to significantly predict whether the presence of women on boards will be 0-10% or above 10%.



Table 3 presents the results of the logistic regression. In Board Model 1, all the five predictor variables have been added. Board Model 1 is statistically significant as Omnibus Test is significant with $\chi^2 = 32.062$, $df = 10$, $p < 0.001$. We fail to reject null hypotheses H_8 and H_9 as p values are above 10% level of significance, which shows that work from home and flexible hours do not have significant impact on the presence of women on boards. We reject null hypotheses H_6 and H_7 fully and H_{10} partially, therefore maternity leave, day care and sabbatical have a significant impact on the presence of women on boards. Beta coefficients for ‘day care’ and ‘sabbatical’ show that, these variables have a significant and positive impact on the presence of women on boards. The odds ratios tell us that day care if available, but not availed, there are 1.927 times (92%) more chances than non-availability of day, that presence of women on boards will be above 10%. Day care if available and availed by employees there are 4.106 times (310%) more chances that women’s presence in boards will rise above 10%. Odd ratio shows that availing the sabbatical increases the chances by 3.936 times (294%). of women’s presence on boards rising above 10% as compared to absence of sabbatical facility. Sabbatical if available and not availed, do not impact the presence of women on boards.

Table 3: Logistic Regression Results (Impact of FFPs on the Presence of Women on Boards)

| Variable | | Board Model 1 | | |
|--|------------------------|------------------|-------|-------|
| | | B | SE | OR |
| Constant | | 0.052 | 0.332 | 1.053 |
| Maternity Leave (Base= Not Available) | Available, Not Availed | -1.100*** | 0.356 | 0.333 |
| | Available, Availed | -0.948* | 0.488 | 0.388 |
| Day Care | Available, Not Availed | 0.656* | 0.344 | 1.927 |



(>.05). Classification accuracy of the model is 65.6% of the cases as compared to 57.3% in the Null Model and finalised to draw conclusions.

DISCUSSION AND CONCLUSION

As evidenced by Social Role Theory, women are expected to play a gender specific role of care taker or home maker and due to this they often face more challenges than men in maintaining a balance between work and family responsibilities which ultimately impact their career advancement to top positions. Several studies suggested the measures which may help women to overcome the barriers and break into the glass ceiling to top leadership positions. These facilitators for women differ at different career levels (Rath, Mohanty and Pradhan 2019).

Our study finds that the availability and use of maternity leave and work from home do not facilitate the career progression of women, whereas day care facility and use of sabbatical raise the chances of women to reach top management positions. However, the use of ‘flexible hours’ adversely affected the career progression of women to top management. It is found further that availability and use of day care and the use of sabbatical are recognised as catalysts for women to access the boards, but maternity leave (availability as well as use) adversely affect the women to reach corporate boards.

Findings of the present research are in line with Hurn (2013) and Amudha et al. (2016) which find that day care facilitates women to rise to top management and board levels. The present research is also coincides with some previous studies which find that family leaves and flexible work arrangements like flexible hours and work from home tend to have an adverse impact on the career progression of women and men employees (Rogier and Padgett 2004; Drew and Murtagh 2005).

The findings of the present research are an eye opener for the organisations as despite having perceived benefits of family friendly policies, when implemented only some family friendly policies like day care and sabbatical facilitate women in their career advancement to top management and board positions. Women consider facility of flexible working hours and maternity leave important to balance their family and work responsibilities but they were found to have negative impact on women’s career advancement. This is due to the fact that, flexible work arrangements and maternity leave are deemed acceptable at the lower level, however, it harms their



progression to senior levels by raising questions about women's commitment, availability, and suitability to top management and board positions. Corporate leaders are expected to demonstrate unwavering dedication and prioritise their professional responsibilities above all else (Schwartz 1996), consequently employees availing flexible working arrangements are considered less committed and focused for the top positions. The problem also lies in the effective implementation of these policies. Moreover, the impact of family friendly policies on career advancement of women is subject to large organisation system and corporate culture. Therefore, even if flexibility policies are provided, until and unless the usage of family-friendly policies is normalised, these policies will remain on paper only (Drew and Murtagh 2005; Rogier and Padgett 2004; Agostino and Levine 2010).

The present research therefore has some theoretical and practical implications that career advancement of women get positively affected by only some policies like day care and sabbatical whereas adversely affected by other policies like maternity leave and flexible hours, because these policies although provided by the organisations, some negative stereotypical notions are still attached, if these facilities are availed by employees irrespective of their gender. Moreover these policies do not work in isolation rather these are part of organisation system and culture, which is impacted by societal barriers too. So it is required to foster a gender-inclusive culture in the organisations and normalise the usage of family-friendly policies in order to leverage the benefits of such policies (Agostino and Levine 2010).

Study therefore implies that the use of family friendly policies should be normalised, so that it can benefit the women as well as men in their career advancement without having any losses associated with these policies. Lastly until and unless the gender equality is being achieved in society and organisation culture become receptive to women, even provision of family friendly policies are of no use to improve the presence of women on top management positions and the boards.

STUDY LIMITATIONS AND FUTURE RESEARCH

Just like any other social study, this study has some limitations. It is based on the data collected from Delhi/NCR hence has a limited geographical scope and covers only female employees. In



future the impact of family friendly policies on career progression of males can be explored. This study is quantitative in nature and to understand the experiences of women in their career journey, qualitative approach is also crucial. Future research can be done using mixed methods like quantitative as well as qualitative research. This research covers only five policies namely maternity leave, day care, flexible hours, work from home and sabbatical, future researchers may include some other family friendly policies as well.

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DIGITAL TRANSFORMATION AND CONSUMER BUYING BEHAVIOUR IN INDIA TOWARDS 2047

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ABSTRACT

The consumer purchase behaviour in India has evolved considerably due to the advent of digitisation, rising internet usage, and the emergence of social networking sites. The main objective of the current research study is to find out the important determinants of the consumer purchase behaviour in India, to assess the impact of digitisation on consumer purchasing, and to compare the behavioural characteristics among different demographic groups, such as age, gender, and income.

The study has been conducted using primary data obtained from 150 respondents by means of a survey using a convenience sampling method. The secondary data have been gathered from relevant research papers, books, and articles from scholarly publications. Analysis of data has been done using percentage analysis, mean analysis, regression analysis, and comparative analysis using Microsoft Excel.

The results show that social media has emerged as an important driver of consumer buying behaviour. Many consumers use social media as a means of gathering information about products, reviews and recommendations, as well as price comparison before making their purchases. Moreover, it can be seen from the results that personalised recommendations, convenience, brand loyalty, and digital engagement positively affect consumer behaviour. This research also makes noticeable differences in consumer buying behaviour by demographic group. A regression test confirms that there is a positive impact of digital aspects on consumer buying behaviour.

In conclusion, this research shows that Indian consumers are gradually becoming more digitally driven in terms of making their purchases. As India moves closer to 2047, advanced technologies such as artificial intelligence, digital marketing, digital payment methods, and social media sites would become an increasingly important part of influencing consumer behaviour.

Key Words: *Social Media, Marketing, Digital Technology, Consumer Behaviour, India 2047.*



INTRODUCTION

The term consumer buying behaviour can be defined as the process by which people choose, buy, use and evaluate goods or services to fulfil their requirements or desires. Consumer behaviour in India has undergone remarkable changes in the past few years because of the rise in digitalisation, internet accessibility, and use of mobile phones and adoption of online payment methods among consumers. The introduction of digital tools has completely altered the way that consumers gather information about products and decide upon them. E-commerce portals, social networking sites, online payment solutions, and AI-based marketing software have led to the development of an extremely interconnected market environment. The contemporary consumer is not reliant exclusively on conventional methods like television ads, newspaper advertisements, and physical stores when it comes to obtaining product-related information. Instead, consumers now search for information online, read reviews, engage in social media advertising, and interact with digital advertisements prior to purchase decisions. With India aspiring to be a developed nation by 2047, it is essential for organisations, marketers, and policymakers to gain an understanding of various factors that impact consumer buying behaviour. Not only are consumers driven by economics such as prices and incomes, but there are other driving forces like technology, sociology, psychology, and the environment. Consumer convenience, digital engagement, personalisation, trust, and sustainability have emerged as key factors influencing consumer behaviour. The objective of this research is to identify the most significant determinants of consumer purchasing behaviour in India, especially focusing on the impact of digitalisation and social media on consumer behavior. This research also focuses on identifying how these determinants will impact consumer behaviour in the future years, leading up to 2047.

CONNECTION BETWEEN DIGITAL FACTOR AND CONSUMER BUYING BEHAVIOUR



Digital aspects have emerged as one of the most crucial determinants that influence consumer behaviour towards purchasing products. The widespread use of smartphones, the internet, social networking sites, and digital wallets has changed consumer behaviour in a significant way. Now, consumers can easily find information related to the product, reviews and ratings provided by other users, along with choices before making their purchase decision.

Social networking sites such as Instagram, YouTube, Facebook, and X (previously Twitter) are not just communication tools anymore; rather, they have become highly effective means for marketing their products. Consumers often come across many products through advertisements and recommendations on these sites. Positive ratings for these products will build customer confidence, whereas negative reviews could lead to dissatisfaction.

Additionally, online payments through systems like Unified Payments Interface (UPI), mobile wallets, and online banking have made shopping convenient and easy. Artificial intelligence (AI) and personalised marketing strategies allow companies to suggest items according to the customers' taste and history, thus making the chances of purchasing higher. Thus, digital variables are becoming an important part of influencing customer perception and attitude towards purchases.

HISTORY/BACKGROUND OF THE STUDY

Buying behaviour in India has experienced considerable changes during the last few decades. Before the liberalisation process in the country, consumers had limited options for making purchases, and these purchasing decisions were determined primarily by the values of their families, personal necessities, and traditional communication mediums. The advent of digital technology became faster following the development of low-cost mobile phones and high-speed Internet connections, including payment methods. As a result of government-led programs such as Digital India and the emergence of various online shopping portals, Indians' ability to purchase products has changed significantly. In today's times, consumer behaviour is shaped by factors such as social media trends, online reviews, digital advertising, and personalised suggestions. It is not just the quality and price of products that affect the decision-making process of consumers. Other important factors include convenience, branding, and social networking. This clearly shows that studying consumer behaviour in the digital era is crucial.



RATIONALE

The rise of digital technologies has revolutionised the world of consumer markets in India. Contemporary consumers remain highly digitally integrated and constantly interact with digital content through social media networks, advertisements, influencers, and online retail websites. Digital interactions play an important role in shaping the consumer's understanding, views, and preferences. While many studies have focused on consumer behaviour, there is little empirical knowledge about the effects of digital evolution, social media influence, artificial intelligence, and changing consumer expectations on India's development aspirations in the years ahead. Additionally, few studies have tried to understand consumer behaviour from the perspective of future-oriented studies, such as India@2047. It is in light of the foregoing that the current study seeks to explore the factors that influence consumer purchase behaviour while assessing how digital technologies may affect consumers in the future.

CURRENT SCENARIO

The current consumer marketplace in India is defined by significant technological advancement and digitalisation trends. Digital media channels and tools are now widely used for information search, price comparisons, decision-making, and the purchasing process. Social media networks like Instagram, YouTube, and Facebook are actively used to influence consumers' behaviour through advertising, endorsement by influencers, and user-generated content.

The wide use of unified payment interfaces, digital wallets, and online banking services has additionally fueled the rise of e-commerce and digital sales. The modern consumers are well-informed, critical, and oriented on experience rather than price or quality alone.

Finally, the problem of misinformation, misleading user feedback, privacy threats, and ethical challenges associated with artificial intelligence usage are currently significant challenges facing the market. Further technological advancements, sustainability trends, and evolving consumers' expectations are likely to shape consumer behaviour in the future, up until 2047., and Differences in digital access between rural and urban consumers continue to influence purchasing patterns across regions.

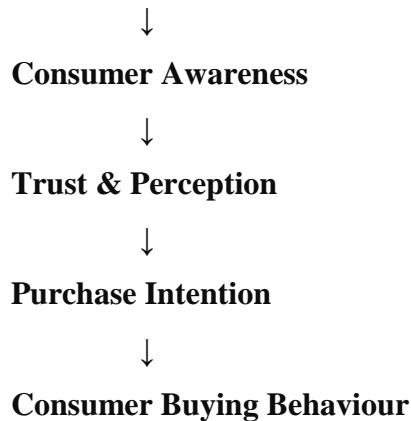


LITERATURE REVIEW

1. Conceptual Framework

The conceptual framework of the present study is based on the proof of identity and analysis. The dependent variable is the consumer buying behaviour, and the independent variables are various factors like economic, social, technological and political factors are;

Digital Factors (Social Media, AI, Digital Payments)



2. Political Factors

The political and regulatory environment indirectly affects the behaviour of consumers when making purchases. According to Stávková et al., macro-level variables, such as policy and governance, affect consumer decision-making. In developing countries like India, government schemes for digitalisation and e-commerce increase accessibility, thus encouraging online purchasing. Also, Dixit et al. state that the development of digital infrastructure positively impacted online purchase behaviour. Nevertheless, current literature has not adequately addressed the role of politics in consumer behaviour from a futuristic perspective, such as India@2047. However, limited studies have explored how future government initiatives, such as Digital India, ONDC, and digital governance reforms, may influence consumer behaviour towards India@2047.



3. Economic Factors

The economic dimension, which includes parameters like the income level, buying power, and price elasticity, impacts consumer purchase behaviour. Fan et al. (2012) and Salvatore et al. (2022) found that consumers favour cost-effectiveness and value for their money. Furthermore, according to Gopinath (2019), the influence of income and pricing is very significant in the FMCG industry. With the growing popularity of online payment systems, consumer purchase behaviour has become much more convenient. Yet, there has been no extensive research conducted on how changes in the economy can affect future consumer behaviour. Furthermore, increasing digital financial inclusion, cashless transactions, and evolving income patterns are expected to significantly influence consumer buying behaviour in India towards 2047.

4. Social Factors

The effects of social and cultural aspects have always played a pivotal role in determining consumer behaviour. As observed by Pantano (2011) and Lawan & Zanna (2013), cultural values, family influence, and social norms have greatly determined consumer behaviour. Today, the use of social media has made these factors more effective due to the current technology revolution. According to Kalariya et al. (2024) and Husnain et al. (2019), the present-day consumers belonging to the Millennials and Generation Z generations are greatly affected by peer pressure and the prevailing trends. The use of social media has brought social influence into the digital world, hence making consumer behaviour more dynamic and trend-oriented. There is limited literature on the integration of both factors. Moreover, the growing influence of digital communities, influencers, and user-generated content is expected to strengthen social influence on consumer purchasing decisions in the future.

5. Technological Factors

Technology has revolutionised consumers' behaviour when shopping. Convenience, user-friendliness, and product reviews have been listed as the main drivers of purchases online by Jadhav and Khanna (2016) and Yong et al. (2023). Park and Kim (2003) underlined the relevance of high-quality information and trust on the Web. The latest research by Radhi et al. (2024) and



Horrich et al. (2025) stressed the increased importance of AI technologies, personalised marketing, and social media websites. Almohaimeed (2019) found the direct effect of social media marketing on purchase intent and brand loyalty. All of the above indicate that technology-related aspects, especially social media platforms, exert a predominant influence on consumer behaviour nowadays. Emerging technologies such as Artificial Intelligence (AI), Machine Learning, Voice Commerce, Augmented Reality (AR), and personalised recommendation systems are expected to further transform consumer buying behaviour in India towards 2047.

6. Environmental Factors

In recent years, environmental consciousness has been gaining prominence in consumers' choices of fashion products. According to Barbu et al. (2022) and Kumar & Ghodeswar (2015), the growing concern for eco-friendliness leads to the popularity of environmentally-friendly products among consumers. In a similar vein, Sangroya and Nayak (2017) mentioned the influence of environmental concerns on energy usage behaviour. Nevertheless, most literature tends to focus on the issue of green consumption and neglects the relationship between environmental consciousness and digital platforms. As sustainability awareness continues to increase, environmentally responsible consumption is expected to become an important determinant of future consumer behaviour.

7. Legal Factors

The legal and regulatory regime is key to establishing consumer trust, especially with online purchases. According to Akroush & Al-Debei (2015) and Baubonienė & Gulevičiūtė (2015), data privacy, security, and consumer protection legislation were vital in affecting the decision-making process when shopping online. The legal system plays an integral role in fostering consumer confidence and encouraging the use of technological systems. Unfortunately, there is very little literature that addresses the legal issues in the online world and how they affect consumer behaviour. Future regulations related to data privacy, cybersecurity, consumer protection, and digital transparency may further strengthen consumer trust in online marketplaces.



RESEARCH GAP

Some studies have been carried out on consumer purchasing behaviour taking into account an economic, social, technical, environmental, and legal perspective (Fan et al., 2012; Pantano, 2011; Lawan & Zanna, 2013). Several factors are crucial in understanding consumer purchasing behaviour. These factors include income, social influence, convenience, information, and trust (Jadhav & Khanna, 2016; Park & Kim, 2003). But most of these studies are based on current consumer behaviour and employ only secondary sources of data. Not much work has been done on how social media, artificial intelligence, payment systems, and personalised marketing collectively affect consumer buying behaviour. Only a few studies have attempted this approach by collecting primary data from Indian consumers (Almohaimeed, 2019; Radhi et al., 2024). Also, while digital transformation is reshaping the consumer landscape, there is a shortage of literature that looks at the long-term implications of such an evolution with a futuristic lens like India@2047. The effect of technological advancements, sustainable trends, and consumer expectations on future purchase behaviour has been poorly investigated (Barbu et al., 2022; Horrich et al., 2025). Also, there has been a lack of research concerning behavioural differences across generations owing to digitisation and social media trends. It is for these reasons that this study aims to shed light on the impact of digital variables on consumer behaviour and future implications for India@2047. In addition, limited studies have examined rural–urban differences in digital consumer behaviour in India, despite significant variations in internet accessibility and digital adoption."

RESEARCH PROBLEM

However, consumer behaviour is experiencing a paradigm shift owing to the social media revolution, but the actual effect cannot be known based on primary data analysis. Also, there has been no study conducted on this aspect with a futuristic angle, for example, India@2047. Thus, the key problem here is to comprehensively determine the effects of social media and other digital aspects on consumer purchasing behaviour.



RESEARCH OBJECTIVE

- The first objective is to determine what influences the consumers' purchasing behaviour in India.
- The second objective is to study the impact of digital factors on consumers' buying behaviours.
- Thirdly, we need to analyse how consumer buying behaviour differs across various demographic groups such as age, gender, and income.

RESEARCH QUESTIONS

- What are the key Factors that Affect Consumer Behavior in India in 2047?
- How do digital factors influence consumer buying behaviour today and in the future?
- What is the Difference between Consumers from Different Age Groups, Demographics, and how is it expected to change in 2047?

RESEARCH HYPOTHESIS

- H₁: To identify the key factors influencing consumer buying behaviour in India
- H₀(Null Hypothesis): There are no significant factors influencing consumer buying behaviour in India
- H₁ (Alternative Hypothesis): There are significant factors influencing consumer buying behaviour in India.
- H₂: To examine the impact of digital factors on consumer buying behaviour:
- H₀₂ (Null Hypothesis): Digital factors do not significantly influence consumer buying behaviour
- H₁₂ (Alternative Hypothesis): Digital factors significantly influence consumer buying behaviour.
- H₃: To analyse how consumer buying behaviour differs across various demographic groups such as age, gender, and income.



- H_{03} (Null Hypothesis): There is no significant difference in consumer buying behaviour across different demographic groups such as age, gender, and income.
- H_{13} (Alternative Hypothesis): There is a significant difference in consumer buying behaviour across different demographic groups such as age, gender, and income.

RESEARCH METHODOLOGY

Research Methodology explains how a Research study is conducted and how data is collected in the present study, which is real and meaningful. And also, what tools and techniques are used to analyse the influence of marketing on consumer buying behaviour in India

Research design: The current research adopts an approach of descriptive and analytical research methodology to analyse the determinants affecting consumer behaviour in India. Moreover, the present study attempts to investigate the possible impact of these determinants on future consumer behaviour in India up to 2047. The study adopts a quantitative research approach based on primary data collected from respondents through a structured questionnaire

DATA COLLECTION AND METHOD

Primary Data: The primary data collection tool used in this study includes structured questionnaires. Structured questionnaires were specifically developed for collecting information related to the consumer perspectives regarding several different factors that may influence them, such as social factors, economic factors, technological factors, and psychological factors, and the data were collected through Google Form during the study period.

Secondary Data: Secondary information is collected from research articles, journals, books, and reliable online sources to support the study and provide a strong theoretical basis.

SAMPLE DESCRIPTION

The sample population for this study included 150 respondents who belonged to diverse demographics in order to bring different perspectives into view. The respondents consisted of



students, professionals and consumers who were involved in the decision-making process regarding purchasing activities and also had knowledge about digital media.

The respondents varied in terms of age, financial status, education and other aspects, thus making it easier for us to understand the differences in consumer behaviour among different categories.

The selection of the respondents was done through a convenience sampling technique.

The sample mainly comprised respondents who used social media and digital media since the research was all about examining the effect of digital and social media on consumer behaviour.

Convenience sampling was adopted due to time constraints and the ease of accessibility of respondents.

METHOD OF ANALYSIS

The research data were collected by means of a questionnaire. The data analysis was performed with the help of MS Excel software. Analysis of percentages allowed detecting significant influencing factors and trends among the respondents. The Regression analysis was used to investigate the effect of digital factors on them. The obtained data were presented in tables and graphs to facilitate the process of analysis. The mean scores analysis was performed to analyse responses based on the Likert scale. Comparison analysis and bar graphs were employed to examine the results among different demographics.

TOOLS AND TECHNIQUES

Tools used for Analysis:

- The data collected through the Questionnaire with the following tools: Microsoft Excel, which is used for tabulation, analysis, and data entry. Various Excel functions such as Percentage calculation, Average mean function, Charts (Bar graphs/piecharts).



Techniques used for Analysis:

a) Percentage Analysis

Percentage analysis was used to understand the distribution of responses.

Used formula: Percentage = (Number of Responses / Total Responses) × 100

b) Mean Analysis

Mean analysis was used to determine the average response for Likert-scale questions.

Used formula: Mean = $\Sigma X / N$

c) Regression analysis to examine the relationship between dependent and independent variables.

Comparative Analysis: it is done through the pivot table, knowing the differences of age, gender, income, vs behaviour.

DATA ANALYSIS AND INTERPRETATION

PERCENTAGE ANALYSIS: This was performed using a pivot table to determine which factor was the most influential and how many people were influenced.

Table-1

| Have you ever purchased a product after seeing it on social media? | Percentage |
|---|-------------------|
| no | 26.28% |
| yes | 73.72% |
| Grand Total | 100.00% |

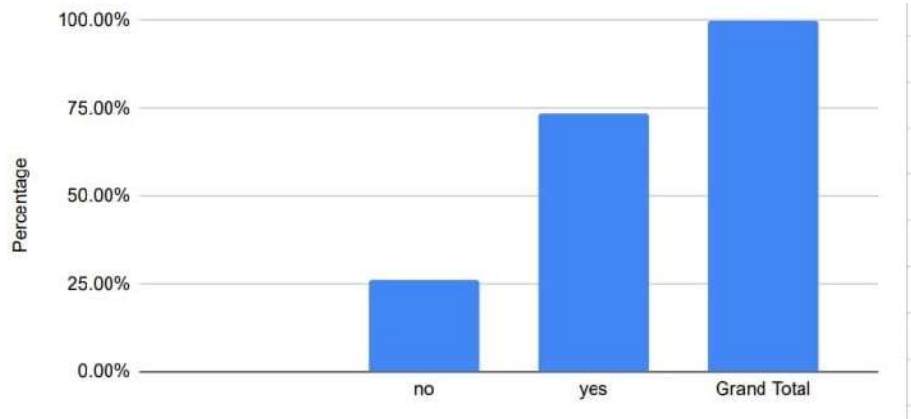


Figure 1.0

INTERPREATION

The percentage analysis reveals that 73.72% of respondents have purchased a product after seeing it on social media, whereas only 26.28% reported that they had not made such purchases. This indicates that social media plays a significant role in influencing consumer buying behaviour in India. The findings suggest that digital platforms, advertisements, influencer content, and online product recommendations have a considerable impact on consumer purchase decisions. Therefore, social media can be identified as one of the key factors influencing consumer buying behaviour among the respondents.

Based on the findings, the Null Hypothesis (H_0) is rejected, and the Alternative Hypothesis (H_1) is accepted. This indicates that significant factors influence consumer buying behaviour in India.

MEAN ANALYSIS - Mean analysis is used for the average responses for Likert scale questions, and it helps in understanding the overall trend of respondents, to check the agree, disagree, and neutral.



Table-2

| | Mean value | Meaning |
|--|-------------|----------------|
| Personalized vs interest | 4.391304348 | strongly agree |
| Compared the prices of products | 3.123188406 | agree |
| Buy products online after seeing them on social media. | 2.884057971 | Neutral |
| Creating awareness about product Quality | 3.268115942 | agree |
| Reducing time and effort searching for a product | 3.47826087 | agree |
| Social media increased brand loyalty. | 4.514492754 | strongly agree |
| Does purchase behaviour depend on income level, and is it influenced by ads? | 3.471014493 | agree |

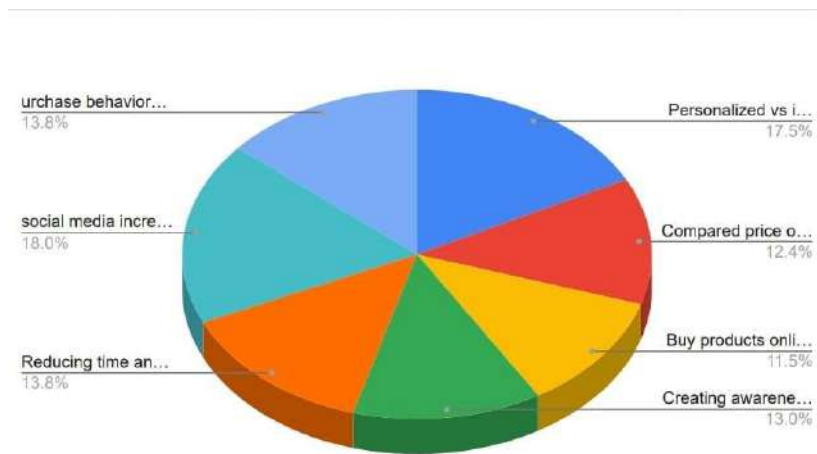


Figure 2.1



INTERPRETATION

The mean analysis was performed to have a grasp of the general perception of respondents about the effect of digital and social media factors in shaping the consumer buying behaviour. From the mean scores, it can be observed that respondents strongly agreed that social media enhances brand loyalty (Mean = 4.51) and that personalised recommendations affect their purchase decisions (Mean = 4.39). Additionally, respondents strongly agreed that social media makes it easier to create awareness about the product quality (Mean = 3.27), saves time and energy in searching for products (Mean = 3.48), and affects purchase decisions because of advertisements and income levels (Mean = 3.47). Respondents strongly agreed that price comparison affects their purchase decisions (Mean = 3.12). However, when it comes to the purchase of products immediately after seeing them on social media, respondents disagreed, scoring low (Mean = 2.88). This shows that consumers do not tend to make a quick decision but rather take their time to analyse the products first. Therefore, it can be concluded that digital factors such as social media and personalised recommendations play an essential role in shaping consumer decisions.

REGRESSION ANALYSIS: *To examine the impact of digital factors.*

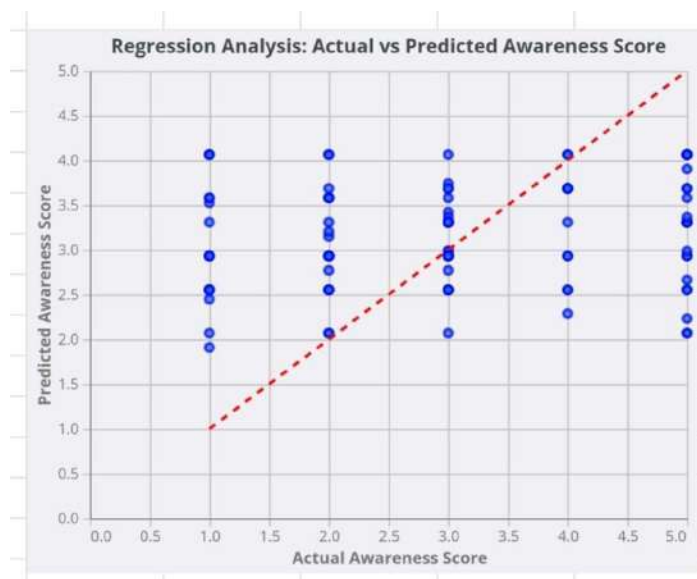


Figure 2.2



INTERPREATION

Regression analysis shows that there is a positive relationship between digital aspects and consumer purchasing behaviour. According to the findings of the study, digital media plays a very important role in affecting consumers' awareness level, purchase intentions, and purchasing behaviours. Thus, this clearly validates the hypothesis formulated for the study. The regression results indicate a positive influence of digital factors on consumer buying behaviour. Therefore, H_{02} is rejected, and H_{12} is accepted.

COMPARATIVE ANALYSIS: to know the differences in demographic factors such as age, gender, and income.

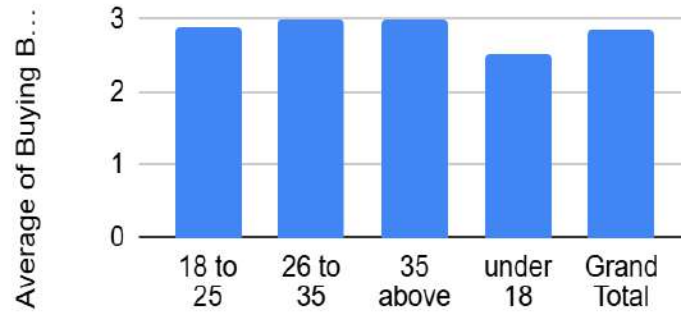
A. Age Vs Behaviour

Table-3.1

| 2. Age:? | 1 | 2 | 3 | 4 | 5 | Grand Total |
|--------------------|-----------|-----------|-----------|-----------|-----------|-------------|
| 18 to 25 | 21 | 22 | 25 | 18 | 18 | 104 |
| 26 to 35 | 1 | 1 | 5 | 3 | | 10 |
| 35 and above | 1 | 2 | 1 | | 2 | 6 |
| under 18 | 3 | 7 | 4 | 4 | | 18 |
| Grand Total | 26 | 32 | 35 | 25 | 20 | 138 |



Average of Buying Behavior Sc...



2.Age:?

Figure 3

Gender Vs behaviour

Table 3.2

| 3. Gender? | Average of buying products online after seeing them on social media platforms? |
|--------------------|--|
| Female | 2.872093023 |
| male | 2.846153846 |
| Grand Total | 2.862318841 |

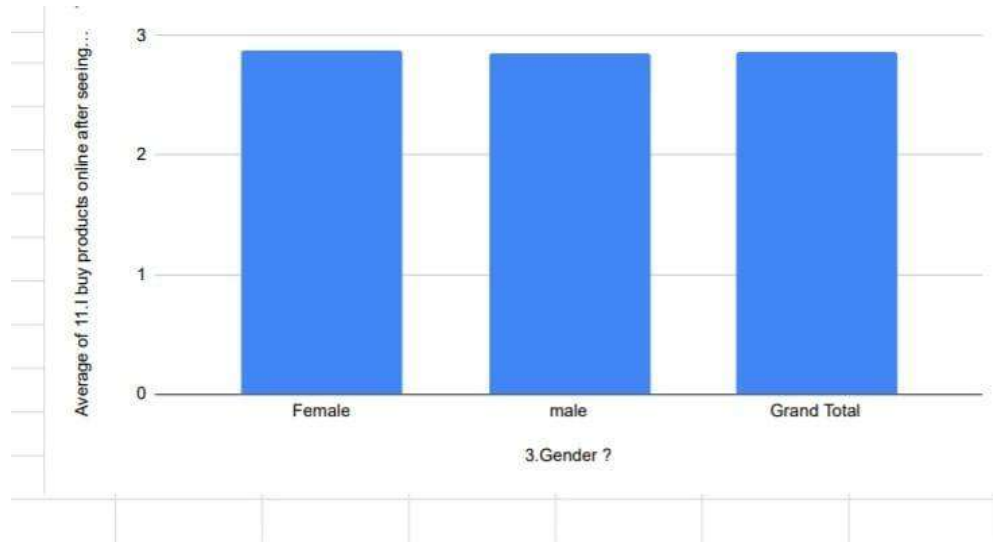


Figure3.2

Income Vs Behaviour

Table - 3.3

| 5. Monthly personal/ family income; | AVERAGE of. I buy products online after seeing them on social media platforms. |
|-------------------------------------|--|
| | 3 |
| 20000 to 50000 | 2.9375 |
| above 100000 | 2.735294118 |
| below 20000 | 2.846153846 |
| Grand Total | 2.862318841 |

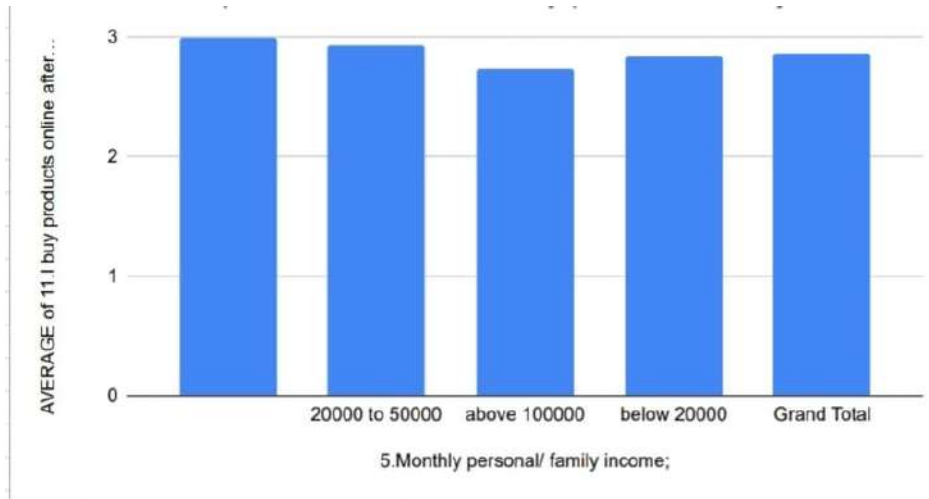


Figure 3.3

INTERPRETATION

Comparative analysis was done to identify differences in consumer behaviour related to buying based on factors such as age, gender, and income. The results show that young people, especially in the age bracket of 18-25, showed greater interest in purchases involving social media usage than their counterparts in higher age groups. Thus, consumers from the youth segment are highly responsive to online activities. From the results, there were minimal differences noted with regard to consumer behaviour among other demographic factors such as gender and income levels. However, despite these small differences, demographic variables contribute towards shaping consumer buying behaviour. It can therefore be concluded that consumer buying behaviour is demographically varied in terms of factors such as age, gender, and income levels.

ETHICAL CONSIDERATION

Ethical considerations were appropriately followed throughout the course of this research. Participation in the research was entirely voluntary on the part of the respondents, and informed consent was obtained from them before data collection. The data given by the respondents is treated as highly confidential and is solely utilised for academic purposes. Personal information of any kind was never revealed during the entire process of research. Moreover, the gathered data was not manipulated in any way throughout its presentation.



LIMITATION

Some limitations can be identified within this study. Firstly, the sample size is small, which implies that the findings obtained cannot adequately generalise to all participants. Besides, it is a convenient sample, implying that it cannot be free from biases. Another limitation associated with this study is that the information obtained is subjective and may be influenced by the bias of participants, as it depends on the answers provided to questionnaire questions. Lastly, due to the restriction on the number of participants, the sample could not be extended to other regions.

FINDING ANALYSIS

The collected data was analysed using Microsoft Excel. For establishing the factors that affect consumer behaviour in the current world, percentage analysis was utilised. On the other hand, mean score analysis was applied to analyse the Likert scale data, whereas the influence of various digital factors on the purchase decisions of consumers was determined using regression analysis. In addition to this, comparative analysis and bar graphs were employed to analyse differences among various demographics like age, gender, and income. According to the findings, today's consumers are highly influenced by social media when making purchases. Consumers often check the advertisements, recommendations, reviews, and ratings provided by various social media platforms before making any decision. Social media platforms not only offer easy access to information but also help the consumer make a comparison of prices. In addition to this, it makes the consumer aware of a particular product and brand. Other findings show that personalised recommendations, brand loyalty, and ease of use play an important role in consumer buying behaviour. The conclusions derived from this study are in line with previous studies. For instance, Almohaimeed (2019) noted that social media marketing has a positive impact on purchase intention and brand loyalty, whereas Jadhav and Khanna (2016) underscored the need for convenience in online purchasing behaviour. In a similar fashion, Park & Kim (2003) highlighted the significance of information quality and trust as key drivers in the making of online purchases. The present results validate the above conclusions and reflect the rising significance of digital platforms in consumer behaviour. Social media, personalisation, convenience, digital



data/information and brand loyalty can be considered major determinants of consumer buying behaviour, according to the study findings. Consequently, the Null Hypothesis (H_{01}) can be rejected, and the Alternative Hypothesis (H_{11}) is supported. The results of regression analyses indicate that digital factors have a significant effect on consumer buying behaviour; thus, H_{02} can be rejected, and H_{12} is supported. The conclusions drawn by the study also show observable variation in consumer behaviour based on demographics. With India gearing up for 2047, upcoming technologies like artificial intelligence and personalised marketing, among others, will play an increasingly critical role in influencing consumer purchase decision-making.

POLICY AND RECOMMENDATION

The research has shown that social media is an essential part of decision-making on purchases among consumers. Enterprises should adopt ethical and authentic advertising practices to enable consumer credibility. It is crucial to apply influencer marketing and positive customer reviews. However, the companies need to refrain from false promotion. It builds the reputation of brands and makes people loyal.

Regarding the implementation of policies, strict regulations are required within the field of digital marketing since they should eliminate issues of false advertising and fake reviews. Moreover, the policies will guarantee the protection of consumers and their privacy.

As for future trends, investments in technologies such as artificial intelligence, which are expected to affect purchasing behaviour by 2047 in India, should be considered by enterprises. However, at the same time, consumers are recommended to become more conscious in their online activities.

CONCLUSION

In this study, an attempt is made to examine the factors affecting consumer buying behaviour in India. Moreover, special attention is given to the impact of digital and social media factors on consumer buying behaviours. It was found that social media plays an important role in shaping the consumer's purchase decisions. Today's consumer uses digital media as an important source of information about products or services before buying any product. This study concludes that personalised recommendations, convenience, brand loyalty, and digital interactions positively



affect consumer behaviour. Furthermore, it is evident from the analysis that consumer behaviour varies according to different demographics, including gender, age, and income level. It is found that younger generations are highly sensitive to social media marketing activities. In addition, it is confirmed through this analysis that digital factors affect consumer behaviour. With India moving closer towards its goal of developing into a developed country by the year 2047, technologies like Artificial Intelligence, personalised marketing, digital payments, and social media will become very important in influencing the consumer behaviour of the Indian population. Consequently, businesses should engage in ethical digital marketing, consumer trust building, and personalised consumer experiences to maintain their competitiveness. For the policymakers, measures to protect the consumers' interests, enhance data security, and ensure digital transparency should be taken. This study contributes to knowledge about contemporary consumer behaviour and offers important implications for businesses, marketers, academics, and policymakers.

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GREEN FINANCE AS A TOOL FOR MOBILIZING SUSTAINABLE INVESTMENT IN EMERGING MARKET

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ABSTRACT

Achieving a sustainable investment in the near future will be done through a chain of green finance. Green finance promotes sustainable investment and helps to grow the economy with environmental sustainability. Previous studies limit on empirical evidence on how efficiently green finance mobilises sustainable investment. This study will examine the role of green finance for a sustainable investment development of economy. Further this study examines role of government and corporates for channelizing green finance for upliftment of economy with environment friendly norms. An empirical research design using secondary data from emerging economy will be used to study. Quantitative techniques are used to analyse the causal relationship between variables. Findings of the study shows green finance significantly impacts sustainable investment. The study shows the impact of Regulations and how Green finance enhances the market share of the companies. It shows that sustainability will be a major subject to be studied in near future for enhancing awareness of environment friendly projects.

Keywords:- *Green finance, sustainable investment, green economy, green instrument, investment behaviour.*



INTRODUCTION

Green finance was introduced in the late 20th century through movements supporting environment friendly activities. In 1972 the concept of sustainable development was introduced. In 1987 Brundtland commission was formed and the concept of sustainable development was popularized by this committee. In 2015 The Paris agreement gave a new form to green finance. It shows climate finance flows consistent with a pathway towards low greenhouse gas emissions. Green finance is considered as a major instrument for solving the problem of climate change and environmental issues that have been raised a lot in the last decade. In India the early stage of green finance started in 2015. India is showing an impactful role as an economy in the world as it is the fastest growing country. In its transformation journey, balance between economic growth and social responsibility is the biggest challenge for a nation (pradhan.k,2024) First green bond was issued by Yes Bank in 2015 to initiate projects related to renewable energy such as wind and solar power. The expansion and market development happened between 2016-2020.

Green bonds and renewable energy are mainly explored in the existing research. Contribution of Indian companies in promoting sustainable investment and green finance and role of banking channels in promoting green funds, green loans and green banking research is not studied effectively as yet.

The primary objective of this research is to find how green finance helps in mobilizing sustainable investment. This study also examines other green instruments like green loans, ESG funds and green banking. It identifies the role of Indian companies in promoting green finance and sustainable investments. It finds the challenges faced by the government in regulating green finance.

Various companies like Adani green power energy ltd., Gravita India Ltd., Tata Power Co.Ltd, is leading in green energy-based projects and working for sustainable development with sustainable investment. Indian renewable energy development Agency established by the government to regulate financial institutions promotes renewable energy financial projects and regulations of loans and other debt funds raised for green energy. In this study Quantitative techniques are used to study the various aspects such as policy framework by government, green instruments by companies and investors behaviour towards sustainable investment through green finance.



REVIEW OF LITERATURE

Jha.B and Bakshi.P(2019)in their study show the role of green finance in promoting sustainability and economic growth in India. Green finance helps us to utilize all funds towards environment friendly projects and mobilizing funds from the public-private and nonprofit sector to those products that support sustainability and climate. Muhammad. S and Kaushal.V(2018) highlights that green finance plays a crucial role in achieving sustainable development by promoting environmentally responsible investment. Indian regulatory measures such as the RBI sustainability guidelines and SEBI Green bonds framework have expanded the scope of green finance. Dhoot.P & Awate.S(2021) research paper argues that green finance has become an increasingly important aspect of financing environmentally-friendly initiatives like renewable energy, pollution prevention, waste management and energy efficiency but it also suggests that the green finance market in India is still in its infancy with limited participation from investors as well as a lack of robust governmental infrastructure supporting the green finance sector. Mishra. M (2024) discusses ESG criteria, green bonds, impact investing and sustainable lending practices as important elements of sustainable finance. It discusses various ways in which India has promoted sustainable finance through renewable energy project financing, green bond programmes, establishment of NCEF, NAFCC, integration of SDGs into business operations, and the regulations established by SEBI regarding green bonds. Chattopadhyay.P (2024) examines that global climate action requires massive financial support with the Global Climate Fund 2025 estimating a need for USD 4 trillion annually to meet Paris agreement goals. In India green finance gained momentum through policies like NAPCC (2008) and RBI's guidelines promoting environmental risk assessment in lending. Kousika.K (2025) asserts that green finance is a growing area for financing environmentally-friendly projects to be created in the country like India yet at present most investors are not engaging in the green finance marketplace due to the lack of a mature regulatory structure supporting the green finance industry and due to the ongoing development process of many investors. Kaur.M (2023) explores how green finance would assist in attaining sustainable development objectives along with offsetting environmental issues. The paper has shown the significance of having a green and transparent economic system to attain sustainable developmental objectives in India. Pradhan.K(2024) studied the outlook of green finance and sustainable development in India, focusing on regulatory structure, financial instruments,



rising trend and contribution of green technology. Their study shows the combined endeavour of the government, green investors, corporates and financial institutions will push up the journey of India in the direction of sustainable development. M.Biju et. al (2024) examines the influence of green finance on sustainable development in India. S.Sujatha and K.Sridhan (2024) highlights investment in renewable energy projects and various schemes supporting it. Their findings show most people think financial investment helps in job creation and green financing can boost a sustainable economy.

RESEARCH GAP

The existing research paper on green finance and sustainable investment mainly focuses on green bonds with a limited consciousness on other financial instruments such as sustainability linked bonds, ESG, fixed rate green notes. There is a lack of research on Indian companies' practical participation in green instruments in stock exchanges and absence of issues faced by companies in adaptation of green projects.

PROBLEM STATEMENT

The importance of green finance is increasing in India as an emerging tool for promoting sustainable development but its scope is largely concentrated around green bonds. Other green instruments are not widely adopted yet and still undervalued. There are regular initiatives taken by government bodies like SEBI and RBI about the challenges like regulatory gaps, awareness of green instruments, lack of standardisation, risk of green washing. The role of Indian companies in promoting green financial instruments is still limited. Indian government and companies are lacking behind in gaining investors' trust on green instruments and green finance projects. Therefore, a comprehensive analysis of green finance and regulation in India is much needed.

OBJECTIVES OF THE STUDY

The objective of the study is to analyse the emerging market of green finance in India in order:

- To study various green instruments other than green bonds that are available in financial markets for green investments like green loans, ESG funds, green mutual funds and green banking.



- To identify and analyse the challenges faced on application and implementation of green finance in India. To examine the role of Indian companies in growth and application of green finance for sustainable investment by evaluating their adoption of green projects.
- To analyse the government regulation policy for better implementation of green finance and green investors protection.

RESEARCH QUESTIONS

- What are the green instruments other than green bonds available in India and use for funding green projects?
- What are the challenges in application and implementation of green finance in India?
- What is the role of Indian companies in the growth and adoption of green finance and how do they adapt the green projects for sustainable investment?
- How effective is the government regulation and policy in promoting green finance and ensuring green investors protection?

RESEARCH METHODOLOGY

The present study is descriptive and analytical in nature, focusing on the growth of green financial instruments, the challenges associated with green finance, and the regulatory initiatives undertaken by the Government to promote sustainable financing in India. The study relies exclusively on secondary data obtained from reliable and authenticated sources.

Data have been collected from official government and institutional sources, including the Reserve Bank of India (RBI), National Stock Exchange (NSE), Bombay Stock Exchange (BSE), India International Exchange (India INX), as well as annual reports, sustainability reports, and other publicly available disclosures of selected companies. The study covers the period from 2021 to 2025 to examine recent developments and trends in green finance.

A purposive sample of eleven Indian companies actively engaged in green finance and sustainable development initiatives has been selected for detailed analysis. The study encompasses a broad range of green financial instruments beyond green bonds, including Environmental, Social, and Governance (ESG)-linked instruments, sustainability-linked notes, green senior securities, and other sustainable financing mechanisms. In addition, government



policies and regulatory frameworks supporting green finance are examined.

To achieve the research objectives, various analytical techniques such as comparative analysis, trend analysis, and pre- and post-reform analysis have been employed. The collected data have been processed and analysed using Microsoft Excel, utilizing tools such as pivot tables, frequency distributions, pie charts, and bar charts to facilitate interpretation and presentation of findings.

Data collection and interpretation of green instruments issued by Indian companies

| Company | Instrument | Issue Year | Tenure | Fund | Financial Institution | Investors | Profits (₹ Cr) |
|---|--|------------|--------|---------------|-------------------------------|---|--|
| Axis Bank Ltd. | Green Additional Tier 1 Notes | 2021 | 2031 | \$300 Million | SGX-ST, ISM, Indian INX, IFSC | Asian 58%, European 20%, US 16%, Middle East 6% | 2025:26,373 2024:24,861 2023:23,172 2022:13,025 2021:6,588 |
| Adani Electricity Mumbai Ltd. | Sustainability Linked Notes | 2021 | 2031 | \$300 Million | Indian INX | Asian 49%, EMEA 27%, North America 24% | 2025:953 2024:230 2023:95 2022:122 2021:259 |
| Adani Green Energy Ltd. | Green Senior Secured Notes | 2021 | 2024 | \$750 Million | Indian INX | Foreign Institutional Investors | 2025:4,871 2024:3,986 2023:3,192 2022:1,584 2021:1,250 |
| Import – Export Bank of India | Senior Notes | 2025 | 2033 | \$10 Billion | LSE, SGX-ST, Indian INX | Asian 50%, EMEA 32%, USA 18% | 2025:32,432 2024:25,817 2023:15,558 2022:7,377 2021:2,540 |
| HDFC Bank Ltd. | Green Senior Notes | 2024 | 2027 | \$300 Million | Indian INX | Asian 83%, EMEA 17% | 2025:67,347 2024:60,812 2023:44,109 |
| Indian Railway Finance Corporation (IRFC) | Fixed Rate Green Notes | 2022 | 2032 | \$500 Million | Indian INX, NSE IFSC Ltd. | Asian 62%, EMEA 25%, US Offshore 13% | 2025:6,502 2024:6,337 2023:6,168 2022:6,090 2021:4,416 |
| JSW Infrastructure Ltd. | Sustainability Linked Senior Secured Notes | 2022 | 2029 | \$400 Million | Indian INX | Asian 64%, EMEA 24%, US Offshore 12% | 2025:1,156 2024:740 2023:327.9 2022:291 2021:190 |
| L&T Infrastructure | ESG | 2017 | 2024 | 667 Cr | NSE | International financial | 2025:14,562 2024:12,966 |

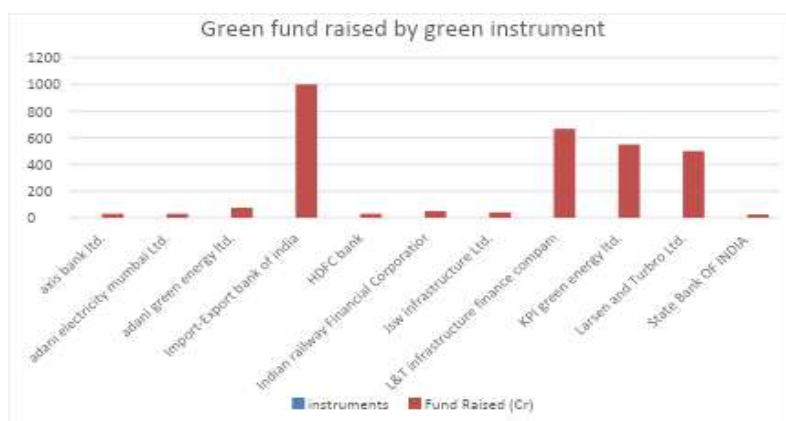
| | | | | | | | |
|------------------------|---------------------------|------|------|---------------|------------|--|---|
| e Finance Company Ltd. | | | | | | corporation (World Bank group member) | 2023:10,374 2022:8,572 2021:6,965 2020:8,894 2019:8,144 2018:7,151 2017:5,920 2016:4,154 |
| KPI Green Energy Ltd. | Green Bond | 2025 | 2030 | 550 Cr | NSE | SBI Capital Market, Aseem Infrastructure | 2025:325 2024:408 2023:78.39 2022:44.62 2021:14.55 |
| Larsen & Toubro Ltd. | ESG | 2025 | 2028 | 500 Cr | NSE | Institutional investors & mutual funds | 2025:17,687 2024:13,059 2023:12,624 2022:10,291 2021:4,669 |
| State Bank of India | Green Floating Rate Notes | 2023 | 2028 | \$250 Million | Indian INX | Private Placement | 2025:61,077 2024:50,232 2023:31,676 2022:20,410 2021:14,488 |

Table: 01 (Source:- INDIAN-INX , BSE and NSE website)

DATA INTERPRETATION

The present analysis is to examine the distribution of various green finance instruments issued in the financial market by Indian companies to raise funds for their projects. The instruments are categorised into green bonds/notes, ESG instruments, sustainability linked instruments and other green finance instruments

DISTRIBUTION OF INSTRUMENT TO RAISED FUNDS



Source:- INDIAN-INX , BSE and NSE website



The bar chart shows that the Import- Export bank of India raised the highest fund of 1000 cr through senior secondary notes. Green bonds and green notes are the most used instruments for raising funds by the companies. Adani green energy limited and Adani Mumbai electricity limited used sustainability linked notes and green senior security notes for raising funds. Banks like HDFC, AXIS and SBI use green notes. The infrastructure companies like JSW infrastructure, L&T infrastructure use ESG and sustainability linked loans to raise fund from the market.

INVESTOR PARTICIPATION IN GREEN INSTRUMENTS

Asian investors show confidence in green financial instruments and dominate the investment share. Second largest shares are held by EMEA (Europe, Middle east, and Africa) shows global commitment towards green finance. A moderate participation by investors reflects their interest in green finance with caution. Banks like Axis bank, Import- Export banks attract international participation. Most of the green finance investors are institutional rather than individual investors. SBI banks raise funds through private participation

ESG and sustainability performance of Indian companies

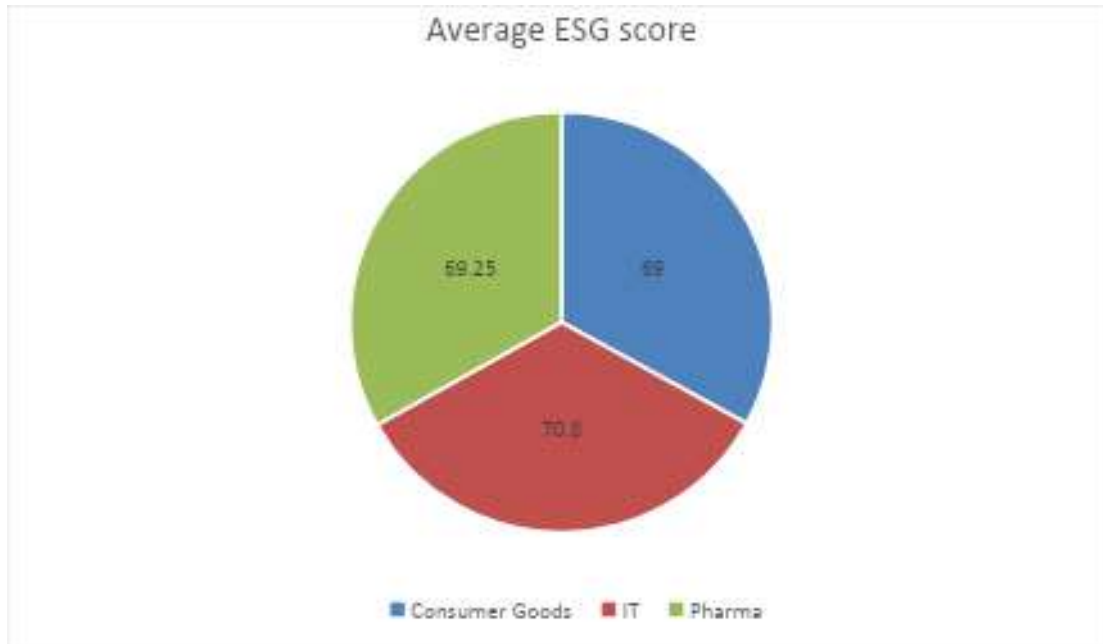
| Company | Sector | Renewable energy | CSR Spend | ESG Score | Net Zero Emission | Sustainability report |
|--------------------|--------|------------------|-----------|-----------|-------------------|-----------------------|
| Infosys | IT | 77% | 628 Cr | 80 | 2040 | Yes |
| Tech Mahindra Ltd. | IT | 22.65% | 95.44 Cr | 77 | 2035 | Yes |
| Tata Consultancy | IT | 79% | 1038 Cr | 61 | 2030 | Yes |
| Larsen & Toubro | IT | 60.33% | 1.457 Cr | 61 | 2040 | Yes |



| | | | | | | |
|---------------------------|----------------|-------|----------|----|---------------|-----|
| Wipro ltd | IT | 84% | 60 Cr | 75 | 2040 | Yes |
| Marico ltd | Consumer goods | 72.7% | 23.79 Cr | 78 | 2030 | Yes |
| Tata consumer product ltd | Consumer goods | 35% | 21.67 Cr | 62 | 2040 | Yes |
| ITC ltd | Consumer goods | 52% | 464 Cr | 66 | 2050 | Yes |
| Hindustan Unilever Ltd | Consumer goods | 97% | 234 Cr | 74 | 2039 | Yes |
| Kansai narolac paint | Consumer goods | 39% | 12.7 Cr | 65 | 2050 | Yes |
| Dr. Reddy Laboratory Ltd | Pharma | 68% | 77.45 Cr | 73 | 2045 | Yes |
| Cipla ltd | Pharma | 64% | 72.49 Cr | 66 | 2025 | Yes |
| Biocon ltd | Pharma | 69% | 32.46 Cr | 72 | 2024 | Yes |
| Divi's laboratory | Pharma | 50% | 50 Cr | 66 | Not specified | YES |

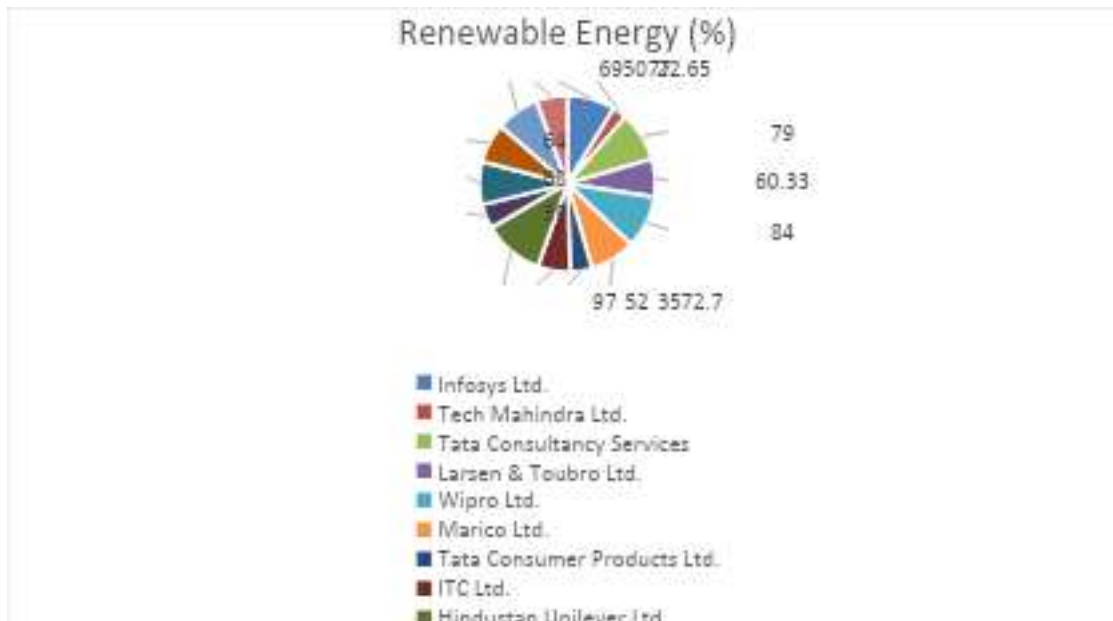
Table: 02 (Data source:- BRSR report of mentioned companies and S&P global and MSCI ESG score)

Data interpretation for examining the growth and application of green finance for sustainable investment by Indian Companies.



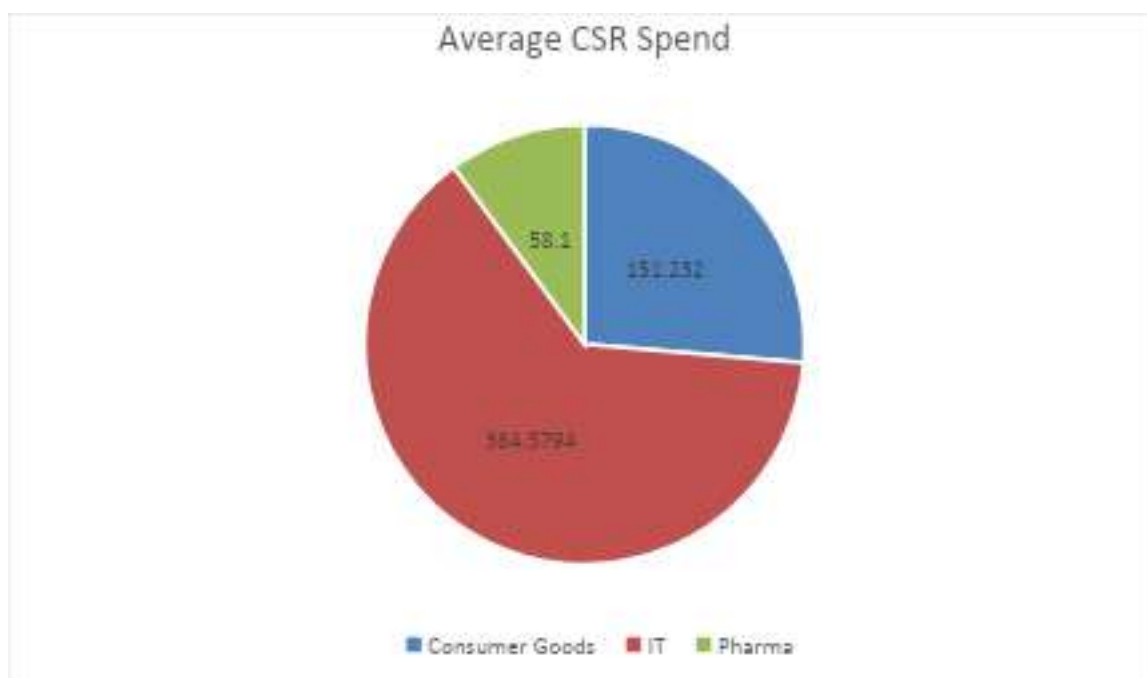
(Source:- S&P global and MSCI ESG score)

The above pivot table and bar graph shows sector-wise ESG score analysis. The results shows that there is almost similar ESG performance of the three sectors but IT is performing slightly better than consumer goods and pharma.



(Source: - BRSR report of companies)

The pie chart analyzes the renewable energy generation and usage by various companies. The analysis depicts that most companies have significantly invested in renewable energy with several firms exceeding 70% usage. Hindustan Unilever Ltd. achieved higher renewable energy usage(97%). This shows a strong commitment towards carbon emission and strengthening cleaner energy.



(Source:- CSR Report)

The analysis of CSR spent by three sectors is done through the pie chart created by using pivot tables. Companies like Tata consultancy services and Infosys Ltd. spent a lot towards social and environmental welfare, making the IT sector highly spending on CSR activities. The consumer sector shows moderate spend on CSR activity. The pharma sector shows relatively lower financial allocation towards social welfare.

GOVERNMENT INITIATIVES FOR PROMOTING AND MONITORING GREEN FINANCE

Sovereign green bonds :- Sovereign green bonds was issued in January 2023 to strengthen green finance strategy It aims to mobilize capital for green projects working on renewable



energy, clean transportation and sustainable environment development.

CURRENT STATUS:

The government has continuously issued green bonds reaching approximately 72697 Cr. by early 2026.

- Focusing on long term sustainability, the government has issued sovereign green bonds of 15000 cr. during the first half of FY 2025-26.
- Funds are provided to the projects related with electric locomotives, metro rail, solar energy planters.

Indian renewable energy development agency (IREDA) was established to promote, develop and extend financial assistance for renewable energy and energy efficiency projects under the Ministry of new renewable energy.

Current Status: -

- It is a public financial institution (PFI) awarded as “Navratna” in 2024.
- During FY 2024-2025 reported its highest profit after tax of 1699 Cr., with a growth in loan book by 28%.

A unit is set up in GIFT city Gujarat to facilitate lending in foreign currency and reduce hedging costs.

DATA INTERPRETATION

- Sovereign green bonds were introduced in January 2023 to show government initiative to towards mobilizing funds for environmentally sustainable projects.
- The total issue of green bonds will reach 72,697cr by early 2026 indicates a rapid growth in green finance projects.
- Reduction on carbon emission is shown by making a large investment in electric locomotives, metro rails and solar energy.
- An issue of 15000 cr. in FY. 2025-26 highlights continuous and long-term investment in sustainable development.
- The aim of the domestic green bond yield curve is to attract investors and stabilize the



green finance market.

- The Indian renewable energy development agency plays an important role in financing renewable energy.
- There is 28% growth in loan and profit after tax (2024-2025) shows a strong financial performance with 1699 cr. indicates a demand for green finance.
- Gift city established in Gujarat facilitates the foreign currency lending and reduces hedging cost.

CONCLUSION

The study aimed to examine the green instruments (like green bonds, ESG, sustainability linked notes etc) issued by Indian companies to strengthen their green finance projects and regulation by government bodies to encourage green investment and protect their rights. The analysis was conducted by using secondary data collected from reliable sources from government websites, company's annual reports and financial markets database (NSE and BSE).

The findings of the study reveals that green finance is rapidly growing in India but the green instruments are limited. ESG shows a growing pattern as a green instrument while sustainability linked notes are the emerging instruments.

The pivot table and pie charts used to study the ESG and sustainability performances of three sectors (IT, Consumer goods and Pharma companies) examines that all the sectors are showing an almost equal ESG performance and more than 70% of renewable energy is used by the identified companies. IT companies spent a larger portion towards the development of society through CSR. Most of the companies work towards net zero emission (a target to achieve between 2030-2045).

However, the studies find that the government is also taking initiatives towards development of green finance. Sovereign green bonds were introduced in 2023 which ensure mobilization of funds towards environment sustainability. Growth of green bonds shows rapid growth in green projects. Indian renewable energy development Agency (IREDA) was established to monitor and control renewable energy.

The Study concludes that green finance is strengthened day by day in India. Companies are investing in green projects issues and green instruments but the major investors are financial



investors rather than individuals. Governments are taking initiative to mobilise the green funds for green projects development and bring laws and regulation to regulate green markets instruments and to protect green investors trust.

RECOMMENDATIONS

Based on findings of the study the following recommendations are proposed:

Strengthen Regulatory Policies: - Government should make standardised rules and regulations for the green market with the Security exchange board of India (SEBI) and Reserve bank of India (RBI) to protect the rights of green investors. The word “green” should be defined in a proper manner and penalties should be imposed to eliminate greenwashing perception.

Monitoring and Control: - There should be a strict provision for monitoring and control of green finance projects and instruments. For real time tracking of funds use of digital technology and AI should be done. Third party audit of green projects should be ensured.

Awareness among investors: - Conduct awareness programmes to attract green investors both domestic and international. Ensure increasing retail investor participation. Increase the knowledge about benefits of green instruments among investors.

Develop domestic green markets: - By issuing a proper guideline related to green finance and green instruments and to ensure increasing frequency of green instruments for the investors.

LIMITATIONS OF THE STUDY

The present study is based exclusively on secondary data collected from published reports, databases, government publications, and other publicly available sources. Consequently, the findings are subject to the limitations inherent in secondary data analysis.

A major constraint of the study is the limited availability of reliable, comprehensive, and consistent Environmental, Social, and Governance (ESG) data across companies. Variations in disclosure practices and reporting quality may affect the comparability of ESG-related indicators.

Further, the absence of a universally accepted framework for ESG and sustainability reporting has resulted in significant heterogeneity in reporting standards among companies. Such



inconsistencies may influence the interpretation and comparative assessment of sustainability performance.

The study is also constrained by the limited availability of detailed and disaggregated data relating to investor participation, particularly with respect to domestic and foreign investors. This restricts a more nuanced examination of investor behaviour and its relationship with ESG performance.

Additionally, the analysis relies partly on government-published statistics and databases, which may be subject to issues of timeliness, revisions, and reporting accuracy. Any discrepancies or delays in data updates may affect the robustness of the study's findings.

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