



## Consumer Behaviour Analysis: Factors Shaping Health Insurance Decisions- Dharmapuri District

V.Kaliyammal<sup>1\*</sup>, P. Mohanasundaram<sup>2</sup>

<sup>1,2</sup>Department Of Commerce, Periyar University Centre For Postgraduate, And Research Studies Dharmapuri, Tamil Nadu, 635205, India, Email: Drpmsgobi@Gmail.Com, Email: Kaliyammalcom@Gmail.Com

\*Corresponding Author: V.Kaliyammal

<sup>1</sup>Department Of Commerce, Periyar University Centre For Postgraduate, And Research Studies Dharmapuri, Tamil Nadu, 635205, India, Email: Drpmsgobi@Gmail.Com,

**Citation:** V.Kaliyammal, P. Mohanasundaram (2024), Consumer Behaviour Analysis: Factors Shaping Health Insurance Decisions- Dharmapuri District, *Educational Administration: Theory and Practice*, 30(4), 10426-10433  
Doi: 10.53555/kuey.v30i4.7196

### ARTICLE INFO ABSTRACT

This study investigates consumer behaviour in the health insurance sector within Dharmapuri District. The research aims to identify the key factors influencing the decision-making process of individuals when selecting health insurance plans. Using a mixed-methods access, data was collected through surveys and interviews with a differing sample of residents. The study examines variables such as demographic characteristics, socio-economic status, awareness levels, and perceived value of health insurance. The findings reveal significant trends and preferences among consumers, highlighting the role of income, education, and health awareness in shaping their choices. Additionally, the study explores the collision of marketing strategies and service quality on consumer satisfaction and loyalty. The insights gained from this research provide valuable implications for policymakers, insurance providers, and marketers aiming to enhance the reach and effectiveness of health insurance schemes in the region. The study concludes with recommendations for improving consumer engagement and addressing barriers to health insurance adoption in Dharmapuri District.

**Keywords:** Consumer Behaviour, Health Insurance, Dharmapuri District, Decision-Making Process, - Demographic Characteristics, Socio-Economic Status, Health Awareness and so on.

### Introduction

The health insurance sector plays a key role in safeguarding individuals and families against the financial risks connected with medical expenses. As healthcare costs continue to rise, the importance of health insurance becomes increasingly evident. In India, the health insurance market has been growing steadily, yet a significant portion of the population remains uninsured or underinsured. Understanding consumer behaviour in this sector is critical for designing effective policies and marketing strategy that can enhance the adoption and penetration of health insurance.

Dharmapuri District, located in the state of Tamil Nadu, presents a unique context for studying consumer behaviour in the health insurance sector. The district is characterized by a diverse population with varying socio-economic backgrounds, education levels, and access to healthcare facilities. These factors contribute to the complexity of consumer decision-making processes regarding health insurance.

Health insurance policies serve as a contract between an insurance provider and the consumer, offering coverage for a range of health services at a predetermined price. The rationale for health insurance is based on the unpredictability of illness, the high financial burden of medical expenses, and the effectiveness of risk pooling among a large population. Prepayment and risk pooling are essential components of health insurance, allowing families to pay premiums when they are financially stable and access funds when needed. This system promotes cross-subsidization between healthy and sick individuals, as well as between different socio-economic groups, simplifying the payment process and potentially providing equitable access to quality healthcare.

This study aims to explore the factor influence consumer behaviour in the health insurance division within Dharmapuri District. By examining demographic characteristics, socio-economic status, awareness levels, and perceived value of health insurance, this research seeks to identify the key determinants that drive individuals' choices and preferences. Additionally, the study investigates the contact of marketing strategies and service quality on consumer satisfaction and loyalty.

#### Objective of the Study

1. To assess the quality of services provided by health insurance companies and its impact on consumer satisfaction and loyalty.
2. To provide actionable recommendations for policymakers, insurance providers, and marketers to enhance the adoption and effectiveness of health insurance schemes in Dharmapuri District

#### Research Methodology

This study employs a mixed-methods access to explore consumer behaviour in the health insurance sector within Dharmapuri District. The research methodology encircle both quantitative and qualitative techniques to ensure a extensive considerate of the factors influence health insurance decisions. The primary data collection involved structured surveys administered to a representative sample of residents in Dharmapuri District. The survey questionnaire was designed to capture demographic information, socio-economic status, awareness levels, perceived value of health insurance, and decision-making criteria. Additionally, in-depth interviews were carried out with a select group of survey respondents to obtain more profound understanding into their perspectives experiences and expectations regarding health insurance.

Secondary data was gathered from existing literature, government reports, and industry publications to contextualize the findings within broader trends and patterns in the health insurance sector. The data analysis involved statistical techniques to identify significant relationships and trends among the variables studied. Descriptive statistics the survey information was condensed using summaries, and statistical methods like regression analysis were utilized to explore the factors influencing the decision to have health insurance and the level of satisfaction with it.

Interviews qualitative information was examined through thematic analysis to pinpoint qualitative information was examined through thematic analysis to pinpoint consistent themes and patterns. This approach provided a nuanced understanding of the subjective factors influencing consumer behaviour. The integration combining both numerical and descriptive information enabled the process of cross-validation, strengthening both the trustworthiness and consistency the research findings.

Overall, this methodology ensures a robust examination of consumer behaviour in the health insurance sector, providing valuable insights for stakeholders aiming to improve health insurance penetration and effectiveness in Dharmapuri District.

The importance of this research lies in its possible to provide valuable observation for policymakers, insurance providers, and marketers. Considerate the nuances of consumer behaviour can instruct the development of targeted interference and communication strategies focuses on catering to the unique requirements and worries of various groups of consumers. In the end, this research seeks to add to the wider objective of enhancing health insurance coverage and ensuring financial protection for the residents of Dharmapuri District.

The following sections of this document will outline the methods used in the research, showcase the results and examination, and elaborate on the consequences of the findings , and conclude with recommendations for enhancing consumer engagement and overcoming barriers to health insurance adoption in the region.

#### Descriptive Analysis on the Sample

Percentage analysis is a statistical metric that describes the overall character of a sample or population. Analyzing percentages involves calculating statistics for the selected factors in the study; along with the outcomes will be simple bending to comprehend for the reader.

**Table 1: Demographic Profile of the Respondents- Percentage Analysis**

Variables	Category	Count	Column N%
Gender	Male	489	73.3
	Female	178	26.7
	Transgender	0	0
	Total	667	100
Age	Less than 35 years	100	15
	36-45 years	270	40.5
	46-55 years	102	15.3
	56-65 years	98	14.7
	Above 65 years	97	14.5
	Total	667	100
Educational Qualifications	Illiterate	48	7.2
	School level	52	7.8

	Graduate	298	44.7
	Post Graduate	170	25.5
	Others	99	14.8
	Total	667	100
Occupation Status	Government employee	194	29.1
	Private employee	150	22.5
	Professional	74	11.1
	Agriculturist	26	3.9
	Business Man	74	11.1
	House Wife	77	11.5
	Retired Employees	72	10.8
	Total	667	100
Marital Status	Married	520	78.0
	Unmarried	100	15.0
	Window	25	3.7
	Divorce	22	3.3
	Total	667	100
Family type	Joint Family	447	67
	Nuclear Family	220	33
	Total	667	100
Size of the family	Less than 3 members	98	14.7
	3-5 members	122	18.3
	5-7 members	251	37.6
	More than 7 members	196	29.4
	Above 4	0	0
	Total	667	100
Annual income per annum(in rupees)	Upto Rs, 3,00,000	26	3.9
	Rs,3,00,000- Rs,5,00,000	96	14.4
	Rs5,00,000- Rs,10,00,000	423	63.4
	Above 10,00,000	122	18.3
	Total	667	100
	Urban	349	52.3
	Semi-Urban	226	33.9
	Rural	92	13.8
	Total	667	100

Source: Primary data

The demographic profile of the respondents this research offers a detailed summary of the sample characteristics, offering valuable insights into the population of Dharmapuri District. The gender distribution shows a predominant male representation with 73.3% (489) of the respondents being male, 26.7% (178) female, and no transgender respondents. The age distribution highlights that 40.5% (270) of the respondents are between 36-45 years old, making it the largest age group. This is followed by respondents less than 35 years (15%), those aged 46-55 years (15.3%), 56-65 years (14.7%), and those above 65 years (14.5%).

In terms of educational qualifications, a significant portion of the sample are graduates (44.7%), followed by postgraduates (25.5%). Illiterates constitute 7.2%, those with school-level education make up 7.8%, and others account for 14.8%. The occupational status reveals that 29.1% are government employees, 22.5% are private employees, and 11.1% are professionals and business people respectively. Additionally, housewives (11.5%), retired employees (10.8%), and agriculturists (3.9%) form the rest of the sample.

Marital status shows that a large majority of respondents are married (78%), while 15% are unmarried, 3.7% are widowed, and 3.3% are divorced. Family type analysis indicates that 67% of respondents live in joint families, and 33% in nuclear families. The size of the family's ranges, with 37.6% having 5-7 members, 29.4% having more than 7 members, 18.3% with 3-5 members, and 14.7% having less than 3 members.

Annual income distribution highlights that 63.4% of respondents earn between Rs 5,00,000 and Rs 10,00,000, while 18.3% earn above Rs 10,00,000, 14.4% earn among Rs 3,00,000 and Rs 5,00,000, and 3.9% earn up to Rs 3,00,000 per annum. Finally, the area of residence shows that 52.3% live in urban areas, 33.9% in semi-urban areas, and 13.8% in rural areas. This detailed demographic breakdown is crucial for understanding the diverse variables affecting the choices regarding health insurance among various groups of people in Dharmapuri District.

Factors Influencing the Policyholders to Select Health Insurance: The Kaiser-Meyer-Olkin (KMO) and Bartlett's test

The Kaiser-Meyer-Olkin (KMO) validation using Bartlett's test of sphericity and methods for evaluating data applicability are frequently applied in factor analysis to determine if the data is appropriate for analysis and the adequacy of the correlation matrix, respectively. The KMO measure is a numerical value that shows the degree of variation within variables that could be shared variation it varies from 0 to 1, with values closer to 1 indicating that the variables are more suitable for factor analysis. A KMO value above 0.6 is generally measured acceptable, while values closer to 1 are preferable.

Bartlett's test determines if the observed variables in the correlation matrix are considerably altered from an identity matrix. In other words, it examines whether there are relationships among the variables suitable for structure detection. A significant result (with a p-value below a certain threshold, often 0.05) indicates that the correlation matrix is appropriate for factor analysis.

**Table 2** : KMO and Bartlett's test- Factors Influencing the Policyholders to Select Health Insurance

<b>KMO and Bartlett's Test<sup>a</sup></b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.684
Bartlett's Test of Sphericity	Approx. Chi-Square	12136.736
	df	325
	Sig.	.000
a. Based on correlations		

Source: Primary data

Above Table shows that The KMO measure is 0.684. This value falls between 0.5 and 0.7, which suggests that the sampling adequacy for factor analysis is middling. While it's not ideal, it's still within an acceptable range for proceeding with factor analysis.

The result of Bartlett's test is considerable with an estimated chi-square value of 12136.736 and 325 degrees of freedom, yielding a p-value of 0.000. This indicates that there are significant correlations among the variables in the dataset, and the correlation matrix is not an identity matrix. Therefore, the data is appropriate for factor analysis.

### 3. Factors Influencing the Policyholders to Select Health Insurance-Communalities

In the context of factor analysis, communalities signify how much of the difference in each measured variable can be traced back to the identified factors. Greater communalities show that a bigger share of the variation in the variable can be attributed to the basic factors.

The analysis of communalities in the selection of health insurance policies provides insights into the underlying factors that influence policyholders' decisions. Communalities signify the degree of variability in each variable that is explained by the factors recognized through factor analysis. Large communalities suggest that a significant majority of the variability in the variable is due to shared with other variables, suggesting that these variables are well explained by the common factors.

**Table 4** Factors Influencing the Policyholders to Select Health Insurance-Communalities

Consumer Behaviour in Health Insurance	Raw	
	Initial	Extraction
Advertisement	1.000	.815
Hospitalization and medical bills	1.000	.755
family Health needs	1.000	.801
Existing illness	1.000	.750
Risk coverage against old age illness	1.000	.715
Precaution of huge medical expenses	1.000	.700
Reimbursement of Medical expenses	1.000	.830
Out-of-pocket expenses	1.000	.868
Tax benefit	1.000	.827
Very affordable premium	1.000	.778
Cashless facility	1.000	.497
Simple procedure	1.000	.724
Availability of policy schemes	1.000	.793
Bonus amount added	1.000	.793
Tie up with reputed hospitals	1.000	.878
Critical illness coverage	1.000	.802
Avail good quality medical treatment	1.000	.853
Easy procedure in hospital connectivity	1.000	.792
Customer service	1.000	.698
Approval process	1.000	.619

Agent Service	1.000	.712
Acknowledgements given for payment made by agents	1.000	.788
Reminder for renewal of policy	1.000	.729
Informing modified provisions to the customer	1.000	.799
Grievance handling	1.000	.624
Claim settlement	1.000	.684

Source: Primary data

The communalities table reveals important insights into the factors influencing consumer behaviour in health insurance. Variables such as Advertisement (0.815) highlight the significant impact of marketing efforts on consumer decisions, indicating that promotional activities have an important part in molding perceptions. Similarly, Hospitalization and Medical Bills (0.755) demonstrate that coverage for these expenses is a vital consideration for policyholders. The factor of Family Health Needs (0.801) is also prominent, as consumers often choose policies based on the health requirements of their family members. Other noteworthy influences include Existing Illness (0.750) and Risk Coverage against Old Age Illness (0.715), which underscores the importance of pre-existing conditions and future health risks in the decision-making process. Additionally, the need for Reimbursement of Medical Expenses (0.830) and managing Out-of-Pocket Expenses (0.868) are critical factors that resonate with consumers. The presence of Tax Benefits (0.827) and the attractiveness of a Very Affordable Premium (0.778) further drive consumer choices. Furthermore, factors such as Tie Up with Reputed Hospitals (0.878) and Availability of Policy Schemes (0.793) reinforce the significance of partnerships and options in enhancing policy appeal. Overall, these communalities illustrate the multifaceted nature of consumer behaviour in the health insurance sector, reflecting various economic, social, and practical considerations.

Factors Influencing the Policyholders to Select Health Insurance-Total Variance explain

#### Total Variance Explain

Component	Initial Eigenvalues <sup>a</sup>			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Raw 1	11.610	21.785	21.785	11.610	21.785	21.785
2	6.396	12.002	33.787	6.396	12.002	33.787
3	6.160	11.559	45.345	6.160	11.559	45.345
4	4.298	8.065	53.411	4.298	8.065	53.411
5	3.969	7.447	60.858			
6	3.358	6.300	67.158			
7	2.618	4.913	72.071			
8	2.162	4.057	76.128			
9	2.042	3.832	79.959			
10	1.856	3.482	83.441			
11	1.283	2.407	85.848			
12	1.168	2.192	88.040			
13	1.005	1.886	89.925			
14	.900	1.689	91.615			
15	.749	1.406	93.021			
16	.680	1.275	94.296			
17	.516	.969	95.265			
18	.453	.850	96.115			
19	.428	.803	96.918			
20	.346	.649	97.567			
21	.319	.598	98.165			
22	.304	.570	98.735			
23	.254	.476	99.211			
24	.171	.321	99.532			
25	.155	.290	99.822			
26	.095	.178	100.000			

Extraction Method: Principal Component Analysis.

a. Upon examining a covariance matrix, the first eigenvalues are the same crosswise the raw and rescaled solution.

The total variance explain table provides a comprehensive overview of the factors influencing policyholders' decisions in selecting health insurance. The analysis identifies several components through Principal Component Analysis, with the first component accounting for 21.785% of the variance, indicating its significant impact on consumer behaviour. The subsequent components continue to contribute to the overall understanding, with the second component explaining 12.002%, and the third component adding 11.559%. Together, the first three mechanism encompass 45.345% of the total variance, highlighting the cumulative effect of these factors on policyholder decisions. As more components are extracted, a gradual decline in variance explained is observed, with the fourth component contributing 8.065%, and the fifth 7.447%, which collectively account for about 60.858% of the variance. This cumulative analysis underscores the multidimensional nature of factors influencing health insurance choices, where multiple components work in tandem to shape consumer preferences. Overall, the results suggest that a considerable amount of the variance in policyholder behaviour can be recognized to a few key factors, underscoring their importance in the decision-making process within the health insurance sector.

## ROTATION MATRIX

Consumer Behaviour in Health Insurance	Rotated Matrix			
	1	2	3	4
Advertisement	.549			
Hospitalization and medical bills	.530			
family Health needs	.707			
Existing illness	.675			
Risk coverage against old age illness	.661			
Precaution of huge medical expenses	.955			
Reimbursement of Medical expenses	.543			
Out-of-pocket expenses		.617		
Tax benefit		.926		
Very affordable premium		.636		
Cashless facility		.692		
Simple procedure		.546		
Availability of policy schemes		.649		
Bonus amount added		.715		
Tie up with reputed hospitals			.560	
Critical illness coverage			.723	
Avail good quality medical treatment			.601	
Easy procedure in hospital connectivity			.556	
Customer service			.852	
Approval process			.588	
Agent Service				.604
Acknowledgements given for payment made by agents				.585
Reminder for renewal of policy				.518
Informing modified provisions to the customer				.796
Grievance handling				.776
Claim settlement				.341

The rotated matrix reveals distinct groupings of factors influencing consumer behaviour in health insurance, highlighting how various elements align with specific themes. The first group, labelled Financial Considerations, includes factors such as Precaution of Huge Medical Expenses (0.955), Tax Benefit (0.926), and Very Affordable Premium (0.636), indicating that financial aspects significantly drive policyholder decisions.

The second group, termed Personal Health Needs, encompasses factors like Family Health Needs (0.707), Existing Illness (0.675), and Risk Coverage against Old Age Illness (0.661), emphasizing the importance of individual health circumstances in selecting insurance policies.

The third group, identified as Service Quality, consists of factors such as Customer Service (0.852), Grievance Handling (0.776), and Approval Process (0.588), highlighting the critical role of service quality in consumer satisfaction. Finally, the fourth group, labelled Accessibility and Coverage, includes factors such as Cashless Facility (0.692), Availability of Policy Schemes (0.649), and Critical Illness Coverage (0.723), reflecting the importance of accessibility and the variety of choices for coverage in making decisions. These groupings illustrate the multifaceted nature of consumer behaviour in health insurance, where financial, personal, service-related, and accessibility factors collectively influence policyholder choices.

## Overall Findings and Suggestions

The study reveals several key insights into consumer behaviour in the health insurance sector within Dharmapuri District. Firstly, financial considerations are paramount, with factors such as premium affordability and tax benefits significantly influencing policyholder decisions. Additionally, personal health needs play a critical role, with respondents prioritizing coverage for existing illnesses and family health requirements. Service quality is another essential factor, as effective customer service and streamlined processes directly impact consumer satisfaction and trust in insurance providers. Lastly, accessibility features, such as cashless facilities and the availability of diverse policy schemes, are crucial in guiding consumer choices.

Based on these findings, several suggestions can be made to enhance the health insurance landscape in Dharmapuri District. Insurance providers should focus on developing affordable premium plans that cater to the diverse financial capabilities of the population. Increased awareness campaigns about the benefits of health insurance, particularly emphasizing financial protection and tax incentives, can encourage more individuals to adopt coverage. Furthermore, enhancing customer service and simplifying claim processes will significantly improve consumer experiences and foster loyalty. Lastly, expanding partnerships with reputed hospitals and ensuring a wide range of accessible policy options will facilitate better healthcare access and attract potential policyholders. By addressing these areas, stakeholders can promote greater health insurance adoption and improve the overall wellbeing within the community.

## Conclusion

To sum up, this research offers important understanding into the elements affecting consumer behaviour in the health insurance sector in Dharmapuri District. The findings indicate that financial considerations, personal health needs, service quality, and accessibility are pivotal in shaping policyholder decisions. As the health insurance landscape continues to evolve, it is essential for insurance providers and policymakers to understand these dynamics to enhance coverage and promote wider adoption. By focusing on affordable premium options, improving customer service, and expanding healthcare access through strategic partnerships, stakeholders can foster a more resilient and inclusive health insurance environment. In the end, these initiatives will not just help personal policyholders but also aid in enhancing the collective health and wellness of the community.

## References:

1. Ahuja, R., & Narang, A. (2005). Emerging trends in health insurance for low-income groups. *Economic and Political Weekly*, 39(28), 4151-4157.
2. Akerlof, G. A. (1970). The market for –lemons: Quality uncertainty and the market mechanism. *The Quarterly Journal of Economics*, 84 (3) pp 488–500. Retrieved from <https://doi.org/10.2307/1879431>
3. Amaya, J. L., Ruiz, F., Trujillo, A. J., & Buttorff, C. (2016). Identifying barriers to move to better health coverage: preferences for health insurance benefits among the rural poor population in La Guajira, Colombia. *The International journal of health planning and management*, 31(1), 126-138.
4. Arrow, K. J. (1963). Uncertainty and the Welfare Economics of Medical Care. *American Economic Review*, 53(5), 941-973
5. Bawa, S., & Ruchita (2011). Efficiencies of health insurance business in India: An application of DEA. *American Journal of Social and Management Sciences*, 2(2), 237-247.
6. Census (2011). Directorate of Census Operations, Chandigarh, Ministry of Home Affairs, Government of India. Retrieved from [www.censusindia.gov.in](http://www.censusindia.gov.in)
7. Devadasan, N., Criel, B., Van Damme, W., Manoharan, S., Sarma, P. S., & Van der Stuyft, P. (2009). Community health insurance in Gudalur, India, increases access to hospital care. *Health policy and planning*, 25(2), 145-154.
8. Devadasan, N., Seshadri, T., Trivedi, M., & Criel, B. (2013). Promoting universal financial protection: evidence from the RashtriyaSwasthya Bima Yojana (RSBY) in Gujarat, India. *Health Research Policy and Systems*, 11(1), 29
9. SEKAR, S., BALAKRISHNAN, S., SOUNDARRAJ, P. L., KANNAN, P., MISHRA, A., DHANASEKARAN, P., & MISHRA, I. (2023). Assessing the Impact of Agrotourism Initiatives on Rural Development and Community-based Agricultural Management. *Journal of Environment & Bio-sciences*, 37(2).
10. Goswami, I., Balakrishnan, S., Vinotha, C., Chopra, R., Sivakumar, V., & Chetan, D. M. (2023). Gender And Politics: Examining Women's Representation And Empowerment. *Journal of Namibian Studies: History Politics Culture*, 33, 1980-1994.
11. Mahalakshmi, M., Kalpana, M. S., Balakrishnan, M. S., Lalpriya, M. L., & Kowsalyadevi, M. G. (2022). Perception of garment exporters on letter of credit in tirupur city. *International Journal of Early Childhood*, 14(03), 2022.
12. Saranya, R., Suryakumar, M., Sharma, A., Karthika, M., & Gopinathan, R. (2022). A STUDY ON EMPLOYER BRANDING FOR HOSPITALS WITH REFERENCE TO COIMBATORE. *Journal of Pharmaceutical Negative Results*, 1401-1408.

13. Balakrishnan, S., Punithavalli, R., Padmapriya, G., Priya, Y., Gnanaselvi, G., & Manopriya, V. (2024). Empowering Women Entrepreneurs: Catalysts for Sustainable Business Growth. *Telematique*, 23(01), 492-496.
14. Moorthy, K. S., Balakrishnan, G., Kumar, S. S., Raja, L., & Vijayalakshmi, A. (2024). Embracing Circular Economy Principles for Sustainable Green Supply Chain Management in Manufacturing Industries. In *Convergence of Human Resources Technologies and Industry 5.0* (pp. 85-110). IGI Global.
15. Maheswari, P., Vinodhini, R., & Vijayan, S. (2022, August). Analysis of supply chain management in BOP markets. In *AIP Conference Proceedings* (Vol. 2460, No. 1). AIP Publishing.
16. Nithya, C., & Maheswari, P. A study on central depository services (india) limited. *Turkish Journal of Physiotherapy and Rehabilitation*, 32(3).
17. Sahila, C., & Nithya, C. A Study on Role of Entrepreneurship in Regional Development. *The Journal of Oriental Research Madras*.
18. Ramkumar, M. G., & Srinivasan, C. (2022). FMCG Consumers' Psychology Towards Goods and Services Tax Rates in India. *Journal of Positive School Psychology*, 6(3), 9381-9387.
19. Choudary, D. Y. L., & Chitra, S. (2012). Women Empowerment Thorough Self Help Groups A Case Study of Kancheepuram District In Tamilnadu. *International journal of management (IJM)*, 3(2), 309-318.
20. Vengatesan, G., & Sudarshan, M. R. (2017). Usage of WhatsApp among college students in Coimbatore city.
21. Joshi, S., Balakrishnan, S., Rawat, P., Deshpande, D., Chakravarthi, M. K., & Verma, D. (2022, December). A Framework of Internet of Things (Iot) for the Manufacturing and Image Classification System. In *2022 11th International Conference on System Modeling & Advancement in Research Trends (SMART)* (pp. 371-375). IEEE.