

HEALTHCARE FINANCING AND ECONOMIC DEVELOPMENT: EXAMINING THE ROLE OF HEALTH INSURANCE IN AGRA'S URBAN ECONOMY

Suraj Pratap Singh

Assistant Professor
Faculty of Arts, Dr. Bhimrao Ambedkar University, Agra (U.P)

ABSTRACT

Healthcare financing plays an important role in promoting economic stability and enhancing public health outcomes in urban economies. This study examines the relationship between healthcare financing and economic development by examining the role of health insurance in the urban economy of Agra City. The study aims to evaluate how access to health insurance impacts healthcare expenditure, economic protection, and overall economic productivity among urban households.

The study adopts a quantitative research design using primary data collected from 65 respondents via a well-structured questionnaire. Descriptive and inferential statistical methods are used to assess the level of awareness, accessibility, and utilization of health insurance plans among citizens. The results show that health insurance plays a significant role in reducing out-of-pocket healthcare expenditure and enhancing monetary security for households. Also, improved healthcare financing mechanisms contribute to better health outcomes, which indirectly support labor productivity and economic growth within the urban environment.

The study emphasizes the importance of increasing health insurance coverage, improving awareness, and strengthening healthcare financing policies to support sustainable urban economic development in Agra City. The findings provide useful insights for policymakers, healthcare organizations, and insurance providers in designing effective strategies to improve healthcare accessibility and economic resilience in urban areas.

Keywords: Health Care Financing, Quality of Healthcare Services, Insurance Development Linkage.

1. INTRODUCTION

Healthcare financing is an essential component of economic development and social welfare in modern societies. Practical healthcare financing mechanisms ensure that individuals have access to necessary healthcare services without experiencing severe financial trouble. According to the World Health Organization, health systems that provide satisfactory financial protection contribute significantly to improved public health outcomes and economic stability. In developing countries such as India, the rising cost of medical care and increasing demand for healthcare services have made healthcare financing an important policy issue.

The concept of health care financing is closely connected to the field of Health Economics, which studies how resources are distributed within healthcare systems and how these decisions influence economic productivity and welfare. Researchers such as William Hsiao (2007) argue that effective healthcare financing systems can reduce financial risks for households and enhance overall health outcomes. Similarly, David Cutler and Richard

Zeckhauser (2000) emphasize that health insurance plays an important role in protecting individuals from high medical expenditures and facilitating efficient healthcare utilization.

Over the past decade, the Government of India has introduced several initiatives aimed at enhancing healthcare accessibility and financial protection. One of the most significant programs is Ayushman Bharat Pradhan Mantri Jan Arogya Yojana, which aims to provide health insurance coverage to economically poor households. According to Narendra Modi (2018), the program represents a major step toward achieving universal health coverage in India by ensuring affordable healthcare services for millions of citizens.

The city of Agra delivers a relevant context for analyzing the relationship between healthcare financing and economic development. The presence of the Taj Mahal, Agra, attracts millions of tourists each year and contributes significantly to regional economic activity. At the same time, the city's rising population and urban growth have increased the demand for healthcare services and financial protection mechanisms.

Prior research has shown that health insurance coverage can positively influence both healthcare utilization and economic productivity. Kenneth Arrow (1963) highlighted the importance of insurance in addressing uncertainty in healthcare markets. Later studies by Joseph Newhouse (1993) also highlighted that health insurance can improve access to medical services while diminishing financial obstacles for individuals and households.

In urban regions such as Agra, socioeconomic inequalities and variations in financial literacy may further influence the adoption and utilization of health insurance policies.

As noted by Michael Grossman (1972), investments in health can be viewed as investments in human capital, which eventually contribute to long-term economic development.

This study aims to analyze the role of health insurance in healthcare financing and its impact on the urban economy of Agra City. Particularly, the research examines the level of awareness, accessibility, and utilization of health insurance among urban residents. By analyzing primary data compiled through a structured questionnaire, the study seeks to understand how health insurance policies affect healthcare expenditure and financial stability at the household level.

The findings of this research are expected to contribute to the growing body of literature on healthcare financing and economic development in urban settings.

1.2 Health Care Financing

Healthcare financing has evolved through different models across nations, including government-funded systems, private insurance industries, and mixed financing structures. Multiple developed countries depend laboriously on public financing through taxation to provide universal healthcare coverage to their citizens. In disparity, several developing countries depend significantly on out of pocket payments made directly by people at the time of acquiring healthcare services. High levels of out-of-pocket expenditure can lead to financial burden and limited access to healthcare benefits, especially for low-income families. The World Bank (2020) reports that millions of people worldwide fall into poverty each year due to high healthcare costs and a lack of satisfactory financial protection.

Healthcare financing is closely linked with the wider field of Health Economics, which explores how healthcare resources are produced, distributed, and consumed within an economy. Scholars such as Kenneth Arrow (1963) highlighted that the healthcare market is unique because of uncertainty, information asymmetry, and unexpected demand for medical

services. These factors make healthcare financing systems particularly important in providing equitable and efficient access to medical-related services.

In India, healthcare financing has become a crucial policy priority due to rising healthcare costs, population growth, and increasing prevalence of chronic diseases. The government of India has introduced several initiatives aimed at strengthening the healthcare financing system and expanding health insurance coverage. One major initiative is Ayushman Bharat Pradhan Mantri Jan Arogya Yojana, which aims to provide financial protection and affordable healthcare services to economically vulnerable populations in both urban and rural areas.

1.3 Research Gap

While nationwide and state-level studies have analyzed health insurance coverage, healthcare expenditure, and PM-JAY implementation in India, practical evidence at the city level especially for Tier-II urban economies with large informal workforces such as Agra City remains insufficient. Existing studies primarily rely on national survey data (NSSO, LASI) or are focused in metro cities or specific states, leaving the connection between health insurance penetration, healthcare financing burden, and urban economic indicators (informal-sector income stability, small enterprise resilience, household savings) in Agra's specific economic context empirically untested. This study fills this gap by providing city level primary evidence on how health insurance access shapes financial security and economic participation among Agra's urban families and informal workforce.

2. REVIEW OF LITERATURE

- Toppo, Gour, Patne, Kumar et al. (2025) conducted an evaluation of awareness and adoption of the Ayushman Bharat Health Account (ABHA) digital health ID among underprivileged rural and urban populations in the Bhopal and Raisen districts. Their findings revealed varying levels of awareness linked to sociodemographic factors, which are significant for understanding how digital financing infrastructure reaches informal urban communities.
- Academic Medicine & Surgery (2025) conducted a cross sectional survey in Southern India, as reported in revealed that despite 55% of respondents having insurance coverage, out of pocket (OOP) expenditure remained notably high. Additionally, a weak negative correlation between household income and OOP spending highlighted the regressive nature of India's healthcare financing structure, with urban respondents incurring higher absolute costs, albeit not necessarily in proportion to their income.
- Singh, Goyal, Narang, Singh, and Singal (2022) conducted a study comparing health insurance coverage and out of pocket (OOP) expenditure among rural and urban households in the Faridabad district. They found that urban coverage was significantly higher, at 58%, compared to 38.5% for rural households. However, rural households still allocated a larger share of their income to healthcare, primarily due to their greater reliance on private consultations and pharmacy services.
- Joseph, Hari Sankar, and Nambiar (2021) conducted an analysis of the PMJAY administrative empanelment data across 30 states and 6 union territories. They found that Uttar Pradesh ranked among the top five states, contributing to 60% of the empanelled facilities despite lacking prior experience with publicly funded health insurance schemes.

- Goyal, Narang, Singh, Singh, and Goswami (2021) conducted a study that explored the sociodemographic factors influencing health insurance coverage among urban and rural residents of Haryana. They compared their findings with NFHS-4 data, which indicates that national coverage stands at approximately 28% in both urban and rural settings. This highlights the fact that gaps in coverage are not exclusively a rural issue.
- Kusuma, Pal, and Babu (2018) conducting the survey involving 2,998 households across 85 urban clusters in Delhi, it was found that only 19% of respondents were aware of health insurance, and merely 18% held any type of policy. The study revealed significant disparities in utilization rates based on the type of scheme, with the Central Government Health Scheme (CGHS) achieving nearly 95% utilization, while the Rashtriya Swasthya Bima Yojana (RSBY) had a utilization rate of less than 10%.
- Karan, Yip, and Mahal (2017) analyzed the impact of the Rashtriya Swasthya Bima Yojana (RSBY) on out of pocket (OOP) spending using three waves of NSSO data from 1999 to 2012, employing a difference in differences design. Their findings indicated that RSBY did not significantly decrease inpatient or outpatient OOP spending or catastrophic expenditures.

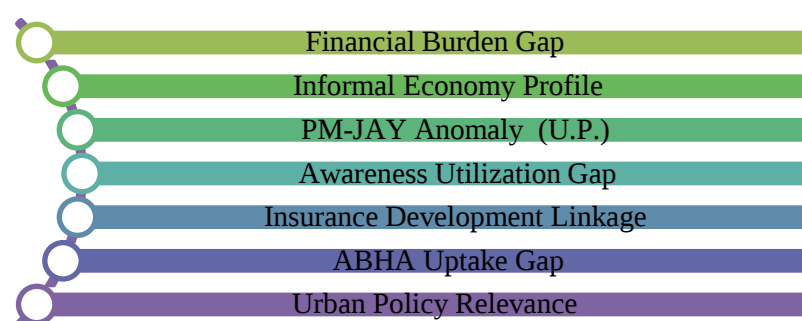
3. NEED OF THE STUDY

- Persistent Financial Burden Despite Insurance Expansion: In India, even with health insurance schemes like RSBY and PMJAY, evidence suggests that RSBY has been inefficient in alleviating financial burdens, with instances showing that even a 55% insurance coverage rate did not completely eliminate high pocket spending. This study seeks to examine the local context in Agra City to explore this disconnect further.
- City Specific Data: Research concerning health economics in India continually centers on national datasets or major cities such as Delhi and Bangalore. Agra, however, remains underexplored, creating a vital evidentiary gap that this study aims to address.
- Agra's Distinct Informal Economy Profile: The local economy is represented by a significant reliance on informal and semi-formal sectors, particularly in leather manufacturing, handicrafts, and tourism. While national data indicate that informal workers face catastrophic health expenditure rates of about 30%, the specific dynamics within Agra's occupational context warrant further investigation.
- Uttar Pradesh's Anomalous PM-JAY Position Needs Local Explanation: Despite being among the top states for empanelled PM-JAY facilities, Uttar Pradesh's lack of earlier experience with publicly financed insurance schemes raises questions. This study will examine actual utilization and impact within Agra to provide insights into this abnormality.
- Awareness to Utilization Gap Remains Unmapped Locally: Earlier studies have shown a significant gap between enrollment in health schemes and actual utilization. For instance, urban poor populations in Delhi reported only 19% awareness, with rural areas displaying even lower utilization rates.
- Weak Linkage between Insurance and Economic Development Indicators: Most of the study currently treats health insurance as a health-access variable with limited

exploration of its economic implications. This paper investigates the connections between insurance access and factors such as household savings, income stability, and small enterprise resilience, emphasizing a critical oversight in existing literature.

- Digital Financing Infrastructure (ABHA) Uptake among Urban Informal Groups Is Unclear: Emerging evaluations show uneven awareness of digital health financing systems like ABHA, particularly among different socioeconomic groups. The specific uptake among Agra's underprivileged urban population remains unexamined.
- Policy Relevance for Urban Health Planning: India advances in digital health financing and PM-JAY expansion, local evidence is essential for guiding useful policy measures tailored to Agra's unique socioeconomic and occupational context rather than relying on generalized data from larger cities.

Fig.1.1: Need of the Study



Source: Self Structured

4. OBJECTIVES OF THE STUDY

- To examine the demographic and socio-economic profile of urban respondents in Agra.
- To analyze the extent and pattern of health insurance coverage among Agra's urban population.
- Identify barriers to insurance adoption and evaluate healthcare facility usage to suggest ways to improve insurance penetration in Agra.
- Assess how health insurance affects work productivity and financial resilience during medical emergencies and illness.

4.1 Hypothesis

H₀1: There is no significant difference between the observed and expected distribution of respondents across age, occupation, qualification, and income groups.

H₀2: There is no significant difference between the proportion of insured and uninsured respondents.

H₀2a: There is no significant difference in the distribution of monthly income spent on healthcare across expenditure categories.

H₀3: Health insurance has no significant effect on respondents' perceived work productivity.

H₀3a: There is no significant difference in the distribution of working days lost due to illness across categories.

H₀4: There is no significant difference among the reasons cited for not having health insurance.

H₀4a: There is no significant difference in the type of healthcare facility used by respondents.

5. RESEARCH METHODOLOGY

The research design uses a descriptive and analytical approach, utilizing a quantitative survey based methodology to gather data. A total sixty respondents from Agra's urban population will be surveyed, selected through a convenience/random sampling technique that target various urban residents, including working professionals, self-employed individuals, and students.

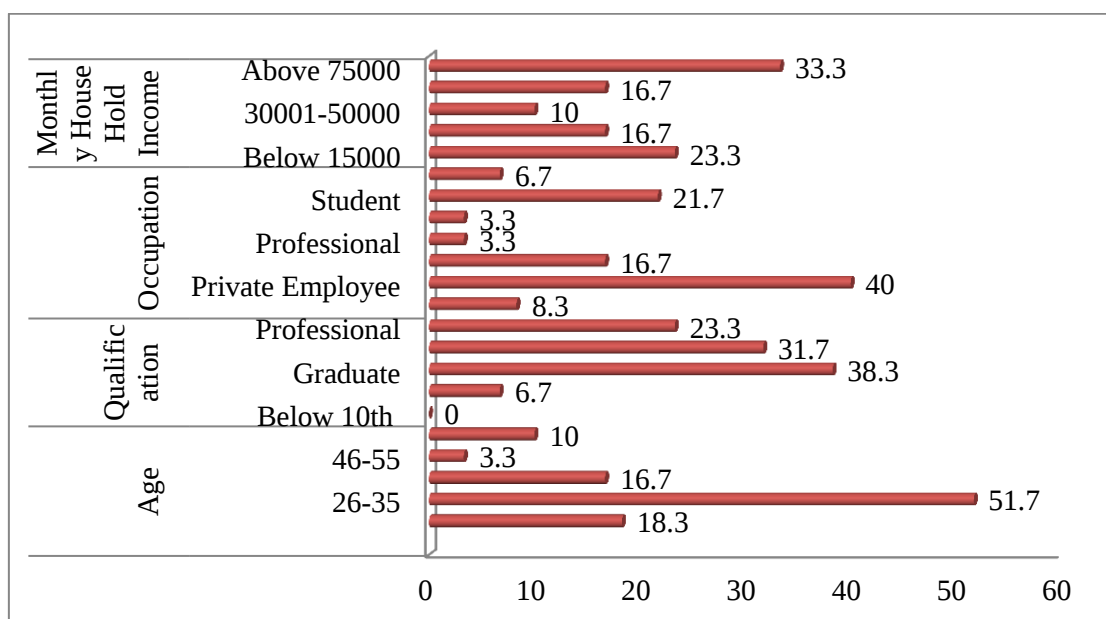
Data Analysis Tools: Descriptive statistics (percentages, frequencies) and Chi-square Goodness of Fit tests (with Fisher's Exact Test and z-tests where applicable) to test significance of response patterns.

5.1 DATA COLLECTION

The data was collected through a structured questionnaire targeting 60 respondent's selected by using random sampling from Agra city. In addition to primary data, the study also utilizes secondary sources, including government reports, published research studies, news articles, and relevant publications to support and contextualize the findings.

5.2 DATA ANALYSIS

Fig.1.2: Demographic Profile

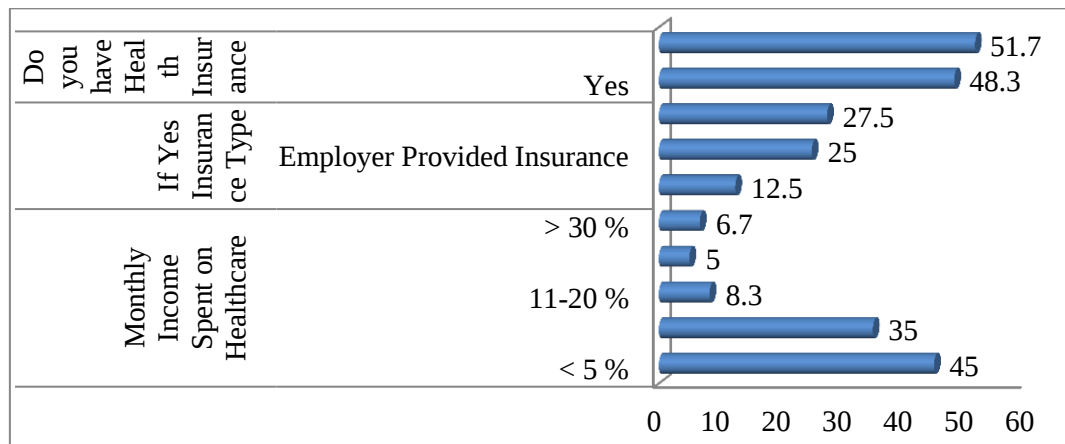


Source: Researcher Findings

The demographic profile shows a predominantly young sample, with over half (51.7%) aged, while older age groups are minimally represented. Educational attainment is high, with Graduates (38.3%) and Postgraduates (31.7%) forming the majority, and none below 10th grade, suggesting a relatively literate respondent base. Occupationally, private employees dominate (40%), followed by students (21.7%) and the self-employed (16.7%), indicating limited representation of government employees who typically have employer-sponsored health coverage. Household income is widely spread, with the largest share earnings above ₹75,000/month (33.3%) alongside a notable 23.3% below ₹15,000, capturing both

economically secure and financially vulnerable groups. Overall, the sample skews toward a young, educated, private-sector/self-employed population with varied income levels, which should be considered when generalizing findings on insurance awareness and healthcare financing to Agra's broader informal workforce.

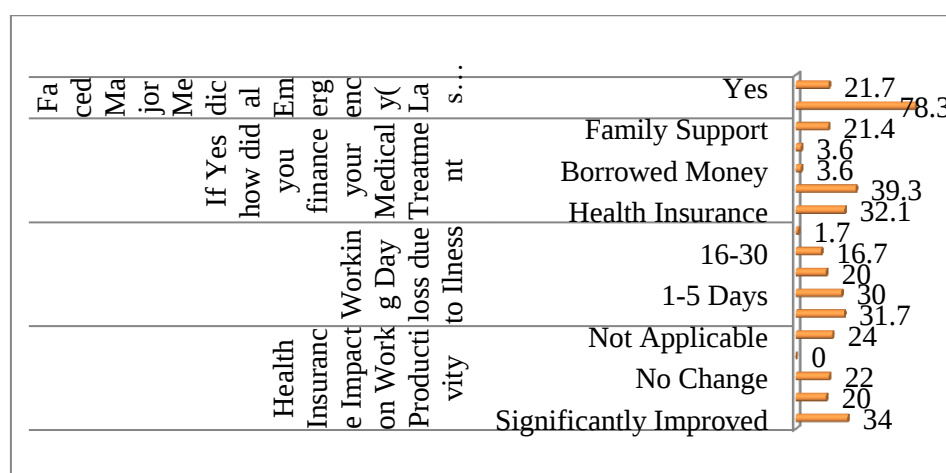
Fig.1.3: Health Insurance Type & Monthly Expenditure



Source: Researcher Findings

Fig. 1.3 shows that health insurance ownership is almost equally split, with 51.7% of people not having any health insurance and 48.3% having it meaning even in this educated, working sample, over half the people still don't have coverage. Among those who do have insurance, most rely on private insurance (27.5%) or insurance provided by their employer (25%), while very few depend on government health schemes (12.5%), showing that people trust private or workplace insurance more than government options. When it comes to healthcare spending, most people spend a small part of their income on healthcare 45% spend less than 5% of their monthly income and 35% spend 5 to 10%, while only a few (around 12%) spend more than 20%. This suggests that for most respondents, healthcare costs are manageable, but a small group likely those without insurance may be facing a much bigger financial burden.

Fig.1.4: Impact of Health Insurance on Work Productivity

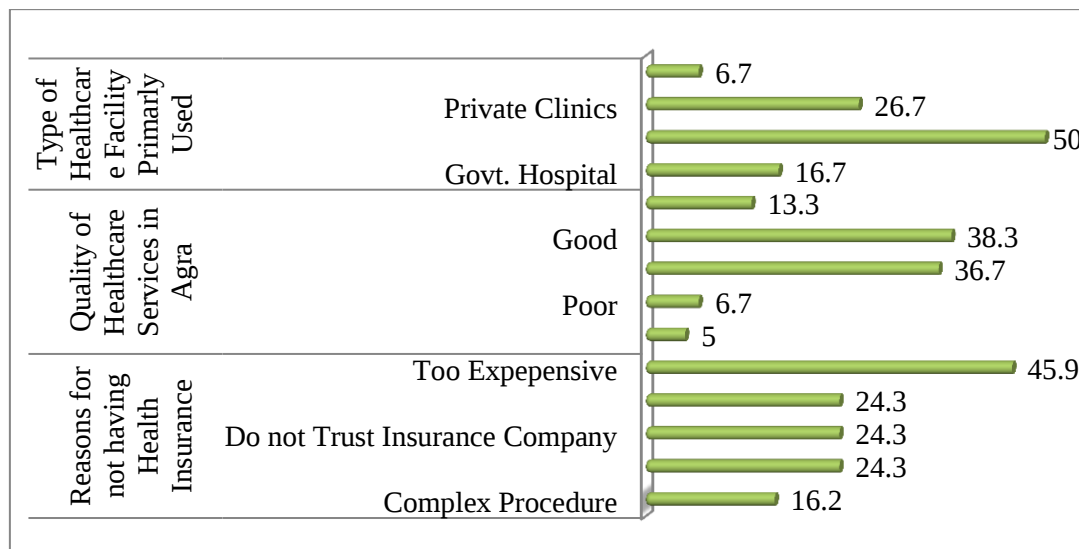


Source: Researcher Findings

Overall, Fig. 1.4 shows that while most respondents haven't faced major medical emergencies or big productivity losses, health insurance still plays a meaningful role helping over half of insured respondents feel more productive at work, even though many still depend on personal

savings rather than insurance alone to cover medical costs. This suggests health insurance supports work productivity and financial security, but its protection is still partial, and awareness or utilization gaps remain, especially for the uninsured group who saw no benefit at all.

Fig.1.5: Healthcare Facilities used, Quality of Services & Reasons for not having Insurance



Source: Researcher Findings

Overall, Fig. 1.5 shows that Agra's residents rely heavily on private healthcare facilities and see the city's healthcare quality as decent but not excellent, while government insurance schemes like Ayushman Bharat remain largely underused. The main reasons for not having health insurance high cost, lack of trust, low awareness, and a false sense of good health suggest that affordability and trust-building, not just awareness campaigns, are key to improving insurance uptake in Agra.

Table 1.1: Chi-square GoF, Fisher's Exact Test & One Proportion z-test

Variable	Test Used	χ^2 / z value	df	Critical Value ($\alpha=0.05$)	Result
Age Group	Chi-square GoF	41.83	4	9.49	Significant ($p<0.001$)
Occupation	Chi-square GoF	44.30	6	12.59	Significant ($p<0.001$)
Qualification	Chi-square GoF	31.83	4	9.49	Significant ($p<0.001$)
Monthly Income	Chi-square GoF	9.33	4	9.49	Not significant ($p\approx 0.053$)
Insurance Ownership(Yes/No)	Chi-square GoF	0.067	1	3.84	Not significant
% Income spent on Healthcare	Chi-square GoF	41.67	4	9.49	Significant ($p<0.001$)
Faced Major emergency	Chi-square GoF	19.27	1	3.84	Significant ($p<0.001$)
Working Days Lost	Chi-square GoF	17.50	4	9.49	Significant ($p<0.01$)
Productivity impact	Chi-square GoF	19.17	4	9.49	Significant ($p<0.001$)

Financing Source (emergency)	Fisher's Exact Test	Nil	Nil	Nil	Recommended (small n)
Facility type Used	Chi-square GoF	24.80	3	7.81	Significant (p<0.001)
Quality of Healthcare Services	Chi-square GoF	31.83	4	9.49	Significant (p<0.001)
Reasons for no Insurance	One Proportion z-test	3.61	Nil	1.96	Significant (p<0.001)

Source: Researcher Calculation

HYPOTHESIS RESULT

H₀₁: Rejected for Age, Occupation, and Qualification (p<0.001); **Accepted for Income** (p≈0.053)

H₀₂: **Accepted** (p>0.05) genuine 50-50 split confirmed

H_{02a}: Rejected (p<0.001) spending is significantly concentrated in lower brackets

H₀₃: Rejected (p<0.001) insurance shows a significant positive association with productivity

H_{03a}: Rejected (p<0.01) significantly skewed toward little/no loss

H₀₄: Rejected (p<0.001) "Too Expensive" is significantly dominant

H_{04a}: Rejected (p<0.001) private hospitals significantly preferred

FINDINGS

- Most respondents are young (26–35 years), well educated, and working in private jobs.
- Almost half of the people (51.7%) don't have health insurance it's basically a 50-50 split.
- People who do have insurance mostly go for private or employer insurance, not government schemes.
- Most people spend very little of their income on healthcare (under 10%), so costs feel manageable for now.
- Most people (78%) haven't faced any major medical emergency in the last 2 years.
- Even people with insurance still use their own savings a lot to pay for treatment insurance isn't covering everything.
- Most people didn't lose many working days due to illness showing low health related absenteeism.
- Over half the people feel health insurance has improved their work productivity so it does help.
- Most people go to private hospitals, not government ones Ayushman Bharat is barely used.

SUGGESTIONS

- Make health insurance more affordable for informal and semi formal workers in Agra City.
- Increase awareness of government schemes like Ayushman Bharat through local campaigns.

- Improve transparency in claims to build trust in health insurance companies.
- Simplify insurance enrolment and claim procedures through digital processes.
- Reframe insurance messaging to target healthy individuals as long term protection, not just immediate need.
- Encourage more employers to offer group health insurance through incentives.
- Strengthen public hospital infrastructure to reduce dependence on costly private care.
- Promote insurance as a productivity and income protection tool, not just medical cost coverage.
- Design combined savings cum insurance products for stronger financial protection.
- Conduct broader studies covering Agra's informal workforce for more inclusive policymaking.

CONCLUSION

This study shows that health insurance does help Agra's urban economy, but only partially. People who have insurance feel more productive at work and lose fewer working days to illness, which shows insurance really does support the local economy. But the problem is that almost half the people in Agra still don't have insurance, and even those who do still depend a lot on their own savings during emergencies. Most people also prefer private hospitals over government schemes like Ayushman Bharat, showing that public insurance isn't being used enough. The biggest reason people avoid buying insurance is that it's too expensive, not just lack of awareness. So overall, health insurance is helpful for Agra's economy, but its full benefit can only be achieved if it becomes more affordable, easier to access, and more trusted especially for the city's informal workers who need it the most.

LIMITATIONS

- Small sample size of only 60 respondents limits generalizability to all of Agra.
- Sample is skewed toward educated, private-sector respondents, underrepresenting informal workers.
- Analysis relied on summarized percentages, not raw data, limiting deeper statistical testing.
- Data is self-reported, so it may involve recall bias or subjective judgment.
- Study is a one-time snapshot limited to Agra, so results may not apply to other cities or over time.

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