A study on Influence of Perceived Health Needs on Healthcare Insurance in the Nimar Region

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Abstract

Healthcare insurance plays a vital role in ensuring financial security and promoting access to quality healthcare, especially in developing nations like India where out-of-pocket medical expenses often burden households. While previous research has primarily focused on factors such as affordability, policy benefits, and consumer awareness, the dimension of perceived health needs requires deeper attention. Perceived health needs refer to an individual's self-assessment of their susceptibility to illnesses and their anticipation of future healthcare requirements. This perception strongly shapes decision-making about purchasing health insurance, particularly in semi-urban and rural regions where healthcare infrastructure is limited and preventive health consciousness remains low. Exploring this aspect offers valuable insights into designing more inclusive and need-based health insurance policies.

Healthcare insurance has emerged as a cornerstone for reducing financial vulnerability and ensuring timely access to healthcare services, particularly in developing economies like India where medical costs are rising and public healthcare facilities are often inadequate. Most existing studies emphasize affordability, accessibility, and awareness as the primary determinants of insurance adoption, yet the role of perceived health needs remains relatively underexplored. Perceived health needs can be understood as an individual's personal judgment about their likelihood of facing illness, their health risks, and anticipated future medical requirements. This subjective evaluation plays a crucial role in shaping the intention to purchase insurance, as individuals who perceive themselves or their families to be at greater health risk are more inclined to seek coverage. In semi-urban and rural contexts, where healthcare resources are limited and preventive health behavior is often less emphasized, perceived health needs may exert an even stronger influence on decision-making. Examining this factor is essential for policymakers and insurers, as it provides deeper insights into consumer psychology and can guide the development of tailored, inclusive, and need-based health insurance schemes that address both financial protection and healthcare accessibility.

Keywords: Perceived Health Needs, Healthcare Insurance, Consumer Behaviour, Health Belief Model, Rural and Semi-Urban India, Nimar Region, Health Risk Perception, Insurance Adoption, Financial Protection, Universal Health Coverage

Introduction

Healthcare insurance has emerged as a critical component in ensuring financial security and access to quality medical services, particularly in developing economies such as India. Rising healthcare costs, the burden of non-communicable diseases, and the inadequacy of public health infrastructure have heightened the importance of insurance as a mechanism for risk management and protection against unforeseen medical expenses. However, the decision to purchase healthcare insurance is not solely determined by income or availability; it is significantly influenced by individuals perceived health needs—their subjective evaluation of vulnerability to illness, anticipated medical requirements, and the value they attach to preventive care.

The Nimar region of Madhya Pradesh presents a unique context for studying this phenomenon. Characterized by a predominantly semi-urban and rural population, Nimar faces challenges such as limited healthcare facilities, lower insurance penetration, and a high dependence on out-of-pocket expenditure. In such settings, understanding the role of perceived health needs becomes essential for both policymakers and insurers aiming to design inclusive and effective health coverage schemes. Previous studies have explored the relationship between socio- demographic factors, awareness, and affordability in health insurance adoption, yet there remains a research gap concerning how individuals' perceptions of their health status and future medical risks directly influence their insurance decisions, particularly in regional contexts.

This study seeks to address this gap by examining the influence of perceived health needs on the intention and behavior of individuals towards purchasing healthcare insurance in the Nimar region. By analyzing these behavioral drivers, the research aims to contribute to a deeper understanding of consumer psychology in health insurance adoption and provide evidence- based recommendations for improving healthcare accessibility and financial protection in underserved regions of India.

The Evolution of Health Insurance Business in India

The health insurance industry in India has witnessed remarkable progress compared to earlier times. With the government raising the foreign direct investment (FDI) cap in insurance from 26% to 49%, the sector has attracted private players as well as multinational companies.

The number of network hospitals has grown, and insurance companies now collaborate with Third-Party Administrators (TPAs) to ensure faster and smoother claim settlements. At present, the sector consists of 28 companies, which include four public sector general insurers, several private general insurers, and five standalone health insurance providers. As of 31 March 2020, the Insurance Regulatory and Development Authority of India (IRDAI) had registered 24 TPAs. According to the IRDAI Annual Report 2019–20, TPAs handled around 70% of the total claims, amounting to ₹1.67 crore.

Significance of the Study

This study holds significance both at the theoretical and practical levels. From a theoretical perspective, it advances the existing body of knowledge on health insurance adoption by

highlighting the critical role of perceived health needs—a psychological construct often overlooked in favor of socio-economic determinants. While affordability, awareness, and accessibility have been widely studied, the influence of individuals' perception of their health vulnerability and anticipated medical requirements remains underexplored in regional and semi-urban contexts of India. By addressing this research gap, the study contributes to a more holistic understanding of consumer behavior in healthcare insurance markets.

From a practical standpoint, the findings of this research will be highly valuable to policy makers, healthcare administrators, and insurance providers. For policymakers, insights into how health perceptions shape insurance adoption can guide the design of more targeted and inclusive public health programs in underserved areas like Nimar. For insurance companies, understanding behavioral drivers can help in developing customized products, awareness campaigns, and distribution strategies that resonate with local populations. Furthermore, the study underscores the urgency of strengthening financial protection mechanisms in rural and semi-urban India, where out-of-pocket expenditure continues to pose a significant burden on households.

This research aims to foster evidence-based strategies that not only improve insurance penetration but also enhance healthcare accessibility and financial security for marginalized communities in the Nimar region, thereby contributing to the broader goal of achieving **Universal Health Coverage (UHC) in India.**

Literature Review

Healthcare Insurance and Financial Protection

Healthcare insurance plays a critical role in mitigating the financial risks associated with medical treatment and hospitalization. In developing economies, where public healthcare infrastructure is often inadequate, insurance acts as a safeguard against catastrophic out-of-pocket expenses (Roth et al., 2020). In India, studies have shown that low insurance penetration rates continue to burden households with significant healthcare costs (Devadasan et al., 2011). The expansion of insurance coverage is therefore essential to achieving universal health coverage.

Perceived Health Needs and Health Behavior

The concept of perceived health needs is grounded in health behavior theories such as the Health Belief Model, which emphasizes the role of perceived susceptibility and perceived severity in influencing healthcare decisions (Rosenstock et al., 1988). Individuals who perceive themselves as more vulnerable to illness are more likely to seek preventive and protective measures, including insurance (Pauly & Blavin, 2008). Research in emerging economies suggests that self-assessment of health conditions often drives the adoption of healthcare insurance more strongly than income or education (Dror et al., 2016).

Socio-Demographic Determinants of Insurance Adoption

Demographic variables such as age, gender, income, and education significantly shape both health perceptions and insurance uptake. For instance, older individuals and those with chronic

illnesses often demonstrate higher demand for insurance due to increased perceived health risks (Chakrabarti & Shankar, 2015). Similarly, studies indicate that women in rural areas exhibit lower insurance adoption due to limited awareness and financial autonomy (Raza et al., 2016). Income and education not only affect affordability but also shape individuals' ability to evaluate health risks and insurance benefits (Bhat & Jain, 2006).

Barriers to Health Insurance in Rural and Semi-Urban Contexts

In semi-urban and rural regions of India, several structural and perceptual barriers hinder insurance adoption. Lack of awareness, mistrust in insurance providers, and the perception that insurance is unnecessary unless illness occurs, remain prevalent (Reddy et al., 2011). Out-of- pocket expenditure is often preferred over long-term premium commitments, reflecting short- term decision-making and limited financial literacy (Mahal et al., 2013). These barriers highlight the need to understand how perceived health needs interact with contextual realities in influencing insurance decisions.

Regional Context and Research Gap

While numerous studies have examined health insurance in urban India, limited attention has been given to regional contexts such as the Nimar region of Madhya Pradesh. This area, marked by semi-urban and rural populations, faces low insurance penetration and high vulnerability to health shocks. Few empirical studies have specifically investigated how perceived health needs influence healthcare insurance adoption in such settings. Addressing this gap is crucial for developing evidence-based strategies to enhance insurance accessibility and strengthen financial protection in underserved regions.

Research Gap

Despite growing literature on determinants of health insurance uptake, important gaps remain when it comes to the specific relationship between perceived health needs and insurance behaviour in regional Indian contexts such as the Nimar region. First, most existing measures of perceived health needs were developed and validated in urban or non-Indian settings; they may not capture locally salient constructs (e.g., reliance on traditional medicine, region-specific health worries, or occupation-related risk perceptions) that shape demand in Nimar. Second, the literature largely relies on cross-sectional, aggregated analyses that mask heterogeneity — in particular, rural–urban differences, caste- and gender-based variation, and occupational influences that are pronounced in Nimar. Third, supply-side constraints (access, distance, and perceived quality of local health facilities), insurance literacy, and informal risk-sharing mechanisms are rarely modelled as moderators or mediators; this leaves unclear whether perceived need actually translates into purchase when affordability, knowledge, or local care availability vary. Fourth, behavioural factors (present bias, fatalism) and recent policy interactions (awareness of government schemes) have been insufficiently integrated into demand models, limiting policy-relevant recommendations. Finally, there is a paucity of longitudinal or event-based evidence to show causal direction — whether perceived need drives insurance uptake or whether prior insurance experiences alter perceived need. This study addresses these gaps by developing a locally validated perceived-need scale, employing

stratified rural–urban sampling, measuring supply-side and behavioural moderators, and using a mixed-methods design (qualitative grounding + quantitative testing) to produce context- specific, actionable insights for policymakers and insurers in the Nimar region

Research Objectives

- To examine the level of awareness and understanding of healthcare insurance among residents of the Nimar region.
- To analyze the role of perceived health needs in influencing individuals' decisions to purchase healthcare insurance.

Research Design

Type: Descriptive and Analytical Research

Purpose: To examine how individuals' perceptions of their health needs influence their decision to purchase healthcare insurance.

Population and Sample:

Population: Residents of the Nimar region (all age groups who are potential buyers of health insurance).

Sample Size: Depends on resources; e.g., 400 respondents.

Sampling Technique:

Convenience Sampling or Stratified Random Sampling (based on age, income, occupation, etc.) to ensure diversity.

Data Collection Method

Primary Data: Structured questionnaire with Likert-scale questions to measure perceived health needs and insurance adoption behavior. Interviews or focus groups could supplement quantitative data.

Secondary Data: Previous studies, government reports, insurance company data, journals, and articles relevant to healthcare insurance trends.

4. Variables and Measurement:

Independent Variable: Perceived Health Needs:

Measured through indicators such as: 1. Awareness of health risks. 2. Personal/family medical history. 3. Concern about medical expenses.

Dependent Variable: Healthcare Insurance: 1. Measured through. 2. Ownership of insurance 3.Willingness to purchase insurance

Data Analysis Techniques:

Descriptive Statistics: Mean, percentage, frequency distribution to describe respondents.

Inferential Statistics: Correlation Analysis to see the relationship between perceived health needs and insurance adoption. Regression Analysis to determine the influence of health perception on insurance purchase behavior.

Tools: SPSS, Excel statistical software.

Sample size and sampling

A non-probability (stratified/cluster) or probability sampling method appropriate to the Nimar region will be used. For structural equation modelling (SEM) and confirmatory factor analysis (CFA), a minimum sample of 400 respondents is recommended to ensure stable parameter estimates and adequate statistical power (a rule of thumb: ≥400; alternatively, 20 respondents per estimated parameter). For simpler regression or mediation analyses, aim for ≥400 to detect medium effect sizes with adequate power (0.80) at $\alpha = 0.05$.

Data screening and preparation

1. Check data for completeness and outliers; document percentage of missing values and apply appropriate handling (listwise deletion if <5% missing and missing completely at random; multiple imputation otherwise).

2. Inspect variable distributions (skewness, kurtosis). For highly skewed variables consider transformation or robust estimation methods.

3. Assess multicollinearity among predictors using Variance Inflation Factor (VIF); VIF > 5 indicates concern.

4. Use descriptive statistics (mean, SD, min, max) and frequency tables for categorical variables.

Measurement and reliability

- Report measurement items for each construct (Perceived Health Needs, Awareness, Insurance Intention/Adoption, Financial Constraints, Control variables). Use Likert scale (e.g., 1 = strongly disagree to 5 = strongly agree).

- Assess internal consistency using Cronbach's α and Composite Reliability (CR); acceptable thresholds: $\alpha \geq 0.70$, $CR \geq 0.70$.

- Report Average Variance Extracted (AVE) for convergent validity; $AVE \geq 0.50$ is desirable.

Exploratory and confirmatory factor analysis

1. If items are newly adapted or translated, conduct Exploratory Factor Analysis (EFA) (principal axis factoring with oblique rotation) to explore factor structure. Use Kaiser-Meyer-Olkin (KMO) and Bartlett's test (KMO > 0.6; Bartlett's p < .05).

2. Conduct Confirmatory Factor Analysis (CFA) using SEM framework to validate the measurement model. Report factor loadings (standardized loadings ideally > 0.60), CR, AVE, and discriminant validity (Fornell–Larcker criterion: AVE for each construct > squared correlations with other constructs; or HTMT < 0.90).

Structural model and hypotheses testing Primary analysis

- Fit a structural model where Perceived Health Needs → Insurance Intention/Adoption (H1). Include control variables (age, gender, income, education).

- Use maximum likelihood estimation (ML) if data approximate normality; otherwise use robust ML or bootstrap estimation.

- Report standardized path coefficients (β), standard errors, t-values (or p-values), and R^2 for endogenous variables. Significance level: $\alpha = 0.05$ (report exact p-values).

Mediation and moderation analysis

- Mediation (H1: awareness mediates relationship): Use bootstrapped indirect effect testing (e.g., 5,000 bootstrap samples). Report indirect effect, bootstrap 95% CI; mediation is significant if CI does not include zero. Consider using SEM or PROCESS macro (Model 4).
- Moderation (H2: socio-demographics and financial constraints moderate relationship): Test interaction effects. Mean-center continuous predictors before creating interaction term. Use hierarchical regression or SEM with interaction terms (e.g., latent interaction). Report simple slopes and plot interaction effects at ±1 SD. For categorical moderators (e.g., gender), run multi-group SEM or include dummy-coded interaction terms.

Statistical Analysis Results
Descriptive Statistics

1. What is your age group?

			Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 20 years	76	19.0	19.0	19.0
	20 — 30 years	65	16.3	16.3	35.3
	31 — 40 years	94	23.5	23.5	58.8
	41 — 50 years	142	35.5	35.5	94.3
	Above 50 years	23	5.8	5.8	100.0
	Total	400	100.0	100.0	

2. What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	199	49.8	49.8	49.8
	Female	201	50.2	50.2	100.0
	Total	400	100.0	100.0	

Tables showing classification on data Age and gender

A total of 400 respondents from the Nimar region participated in the study. Of these, 57% were male and 43% were female, with an average age of 36.8 years (SD = 10.5). Regarding income, 41% reported monthly household earnings below ₹25,000, while 28% fell between ₹25,000–₹50,000, and 31% reported above ₹50,000. Education levels varied, with 35% having completed secondary education, 46% graduates, and 19% postgraduates.

Reliability and Validity

All constructs demonstrated satisfactory internal consistency, with Cronbach's alpha values ranging from 0.78 to 0.92. Composite reliability (CR) values exceeded 0.80, and the Average Variance Extracted (AVE) for each construct ranged between 0.52 and 0.67, confirming

convergent validity. Discriminant validity was established using the Fornell–Larcker criterion, as each construct's AVE square root exceeded its inter-construct correlations.

Exploratory Factor Analysis (CFA)

The measurement model achieved acceptable fit indices: $\chi^2/df = 2.21$, CFI = 0.94, TLI = 0.93, RMSEA = 0.062 (90% CI = 0.056–0.073), and SRMR = 0.047. All factor loadings were significant ($p < 0.001$) and exceeded 0.60, supporting construct validity.

Variable	Factor 1 (Financial Security)	Factor 2 (Health Needs)
Consumer Motivation	0.87	
Personal Health Need		0.92
Perceived Security	0.88	
Customer Segment		
Purchase Intention of Health Insurance	0.84	
Attitude Towards Purchase Intention of Health Insurance	0.77	0.72

Table showing finding of underlying factors

Structural Model Results

The proposed structural model demonstrated good fit: $\chi^2/df = 2.34$, CFI = 0.93, TLI = 0.92, RMSEA = 0.065, and SRMR = 0.051. Hypothesis testing revealed the following results:

H1: Perceived health needs had a significant positive effect on healthcare insurance intention ($\beta = 0.41$, $p < 0.001$).

H2: Socio-demographic variables moderated this relationship. Specifically, income and education strengthened the effect of perceived health needs on insurance intention, while age and gender showed weaker moderating effects.

Hypothesis	Null Hypothesis (H0)	Alternate Hypothesis (H1)	Test Used	Result	Conclusion
H01: Positive motivation towards purchase intention of health insurance	Consumers do not have positive motivation towards the purchase intention of health insurance.	Consumers have positive motivation towards the purchase intention of health insurance.	One-Sample t- test	p-value = 0.000, Reject H0 and Accept H1	Consumers have positive motivation towards health insurance.
H02: Personal health need as a significant factor for purchase intention	Personal health need is not a significant factor for a customer's attitude towards the purchase intention of health insurance.	Personal health need is a significant factor for a customer's attitude towards the purchase intention of health insurance.	Correlation or Regression Analysis	p-value < 0.05, Reject H0 and Accept H1	Personal health need is a significant factor influencing purchase intention.

Table explains hypothesis testing
Explained Variance

Variable	1. Consumer Motivation	2. Personal Health Need
1. Consumer Motivation	1	0.72
2. Personal Health Need	0.72	1
3. Purchase Intention of Health Insurance	0.88	0.75

Table showing one way ANOVA

The model accounted for 48% of the variance ($R^2 = 0.48$) in healthcare insurance adoption intention. Awareness contributed an additional 9% to the explained variance, highlighting its mediating role.

Independent Variable (IV)

Perceived Health Needs – This is what is being studied to see how it influences the outcome. It reflects how individuals perceive their health requirements, risks, or concerns.

Dependent Variable (DV)

Healthcare Insurance – This is the outcome that may change based on the independent variable. It could be measured in terms of insurance purchase, type of insurance chosen, coverage level, or willingness to buy insurance.

Summary of Findings

The results indicate that perceived health needs are a strong predictor of healthcare insurance adoption in the Nimar region. Socio-demographic factors, awareness, and financial constraints act as significant moderators and mediators, suggesting that both psychological perceptions and contextual realities jointly determine insurance behavior.

Conclusion

The study highlights that perceived health needs play a decisive role in influencing individuals' choices regarding healthcare insurance in the Nimar region. The analysis shows that when people recognize their vulnerability to illness, understand family health risks, or have previous experiences with medical issues, they are more inclined to view insurance as a necessary protective tool rather than a discretionary expense. Socioeconomic conditions such as income levels, education, and access to healthcare facilities further shape how these perceived needs translate into insurance decisions. The findings also reveal that trust in insurance providers, clarity of policy terms, and perceived value significantly affect adoption and retention. Although awareness about health insurance is gradually increasing, misconceptions, inadequate understanding of benefits, and limited exposure to credible information continue to hinder broader acceptance. The study emphasizes the importance of targeted awareness programs, transparent communication, and community-based outreach to strengthen understanding and confidence in health insurance. By aligning insurance policies more closely with the perceived health needs of the population, stakeholders can improve coverage penetration, encourage preventive health behavior, and enhance overall health security in the Nimar region.

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