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NAVIGATING COMPLEX HEALTH ENVIRONMENTS: CHALLENGES AND STRATEGIC ADAPTATION IN FAITH-BASED HEALTHCARE ORGANIZATIONS

***James P Kunnath and Prof. Dr. Meenakshi Shrivastava**

Research Student, Infant Jesus Hospital, India

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****Corresponding author:***
James P Kunnath

ABSTRACT

Background: Faith-based healthcare organizations operate within complex external environments characterized by multiple simultaneous pressures. Understanding how these organizations navigate political, economic, social, technological, environmental, and legal (PESTEL) challenges is essential for ensuring sustainability and service delivery. ***Methods:*** A cross-sectional study was conducted with 250 CHAI-affiliated hospitals using structured questionnaires. Hospital administrators assessed challenge severity across six PESTEL dimensions and evaluated feasibility of proposed strategic interventions. ***Results:*** Moderate challenges were reported across all PESTEL domains: political (52.4%), economic (46.4%), social (54%), technological (49.6%), environmental (46.8%), and legal (45.6%) dimensions. Economic challenges were experienced uniformly across all hospital categories ($p>0.05$), suggesting systemic financial pressures. Political challenges were significantly more severe in non-southern states (mean=64.3±13.0) than southern states (mean=59.2±12.3; $p=0.003$). Technological strategy feasibility was significantly associated with institutional age, with hospitals established >60 years reporting higher perceived capacity (mean=70.6±12.9) than newer institutions ($p=0.032$). Social strategy feasibility was higher in urban and sub-urban hospitals (mean=69.8±15.5) compared to rural facilities (mean=65.5±12.5; $p=0.020$). Most hospitals (50–60%) perceived proposed strategies as moderately feasible across all PESTEL domains. ***Conclusions:*** Faith-based hospitals navigate multidimensional external challenges requiring simultaneous attention to diverse environmental pressures. The uniform experience of economic challenges across hospital types indicates systemic financial pressures requiring sectoral and policy-level responses. Organizational maturity and settlement characteristics influence capacity for strategic adaptation. Strengthening institutional resilience requires multi-level interventions combining organizational development, sectoral collaboration, and supportive government policies. The findings demonstrate that faith-based healthcare organizations function as complex adaptive systems responding to and constrained by multiple interconnected environmental factors.

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INTRODUCTION

Healthcare organizations operate within complex, dynamic external environments characterized by rapid change, multiple simultaneous pressures, and increasing uncertainty (Ginter *et al*., 2018). Environmental analysis frameworks such as PESTEL (Political, Economic, Social, Technological, Environmental, Legal) enable systematic examination of external factors that create opportunities and constraints for organizational functioning (Ginter *et al*., 2018). Understanding how healthcare organizations navigate these multidimensional challenges is essential for strategic planning, resource allocation, and organizational sustainability. Faith-based healthcare organizations occupy distinctive positions within healthcare systems, often operating with mission-driven priorities emphasizing service to vulnerable populations, ethical healthcare delivery, and community accountability (Olivier *et al*., 2015). These organizations frequently function in resource-constrained settings where government infrastructure is limited, private corporate providers are absent, and economic capacity is restricted. The interaction between mission-driven organizational values and complex external environmental pressures creates distinctive challenges requiring strategic adaptation and innovative responses. The Catholic Health Association of India (CHAI), representing the largest non-profit healthcare network in India with over 600 hospitals and 2,200 health centres, provides essential healthcare services to approximately 21 million people annually, particularly in underserved rural, tribal, and remote regions (Catholic Health Association of India, 2021). However, the ability of CHAI institutions to sustain service delivery depends critically on their capacity to navigate and

adapt to diverse external environmental pressures while maintaining organizational mission and values. Limited research exists examining how faith-based healthcare organizations systematically assess external environmental challenges and develop strategic responses. Previous studies have focused on isolated aspects of healthcare organizations (such as financial sustainability or regulatory compliance) without examining the multidimensional nature of external pressures or how organizations simultaneously navigate multiple environmental domains. Understanding the specific nature of PESTEL challenges experienced by faith-based institutions, their geographic and organizational variation, and the feasibility of strategic interventions is essential for informing evidence-based organizational and policy strategies. This study examines the political, economic, social, technological, environmental, and legal challenges experienced by CHAI-affiliated hospitals and evaluates hospital administrators' perspectives on the feasibility of strategic interventions addressing these challenges. The findings aim to inform organizational management strategies and policy support mechanisms for faith-based healthcare institutions operating in resource-constrained environments.

METHODS

Study Design and Setting: A quantitative descriptive cross-sectional study was conducted across 250 CHAI-affiliated hospitals in India, representing approximately 38% of the CHAI network. The study encompassed hospitals across diverse geographic regions (southern, central, northern, and northeastern states), settlement types (urban, sub-urban, rural), and institutional contexts (primary care, secondary care, tertiary care, and medical college hospitals).

Data Collection: Data were collected through structured questionnaires administered to hospital heads responsible for strategic and operational decision-making. The questionnaire included:

1. ***Challenge Assessment Scale:*** Hospital administrators rated the severity of challenges in each PESTEL domain on a five-point scale (1=Greatest Challenge to 5=Least/Not at all a Challenge). Challenges included:

- Political: policy stability, government schemes, bureaucratic procedures
- Economic: funding constraints, operational costs, patient affordability
- Social: health-seeking behavior, cultural barriers, health literacy
- Technological: digital infrastructure, access to advanced technologies
- Environmental: resource availability, waste management, climate impacts
- Legal: regulatory compliance, accreditation standards, litigation risks

2. ***Strategy Feasibility Assessment:*** Hospital administrators evaluated the feasibility of proposed strategic interventions across each PESTEL domain on a three-point scale (1=Low Feasibility; 2=Moderate Feasibility; 3=High Feasibility).

Data Analysis: Descriptive statistics summarized challenge severity and strategy feasibility. Independent t-tests and Mann-Whitney U tests examined associations between institutional variables (state, hospital type, settlement type, geographic setting, hospital age, quality accreditation status) and challenge assessment scores or strategy feasibility scores. Statistical significance was set at $p<0.05$.

Reliability and Validity: The questionnaire was pretested with 30 hospitals outside the study sample. Cronbach's alpha coefficients were calculated: political challenges ($\alpha=0.729$), economic challenges ($\alpha=0.804$), social challenges ($\alpha=0.739$), technological challenges ($\alpha=0.793$), environmental challenges ($\alpha=0.727$), and legal challenges ($\alpha=0.823$), all exceeding the 0.70 threshold for acceptable internal consistency.

Ethical Considerations: Institutional ethics approval was obtained prior to data collection. All participants provided informed consent, and confidentiality was maintained throughout the study.

RESULTS

Challenge Assessment Across PESTEL Domains: All six PESTEL dimensions presented moderate challenges to CHAI-affiliated hospitals. Political challenges were rated as moderate by 52.4% (n=131) of hospitals, low by 36.4% (n=91), and high by 7.6% (n=19). Economic challenges were rated as moderate by 46.4% (n=116), low by 36.4% (n=91), and high by 14% (n=35). Social challenges were rated as moderate by 54% (n=135), low by 32.8% (n=82), and high by 8% (n=20). Technological challenges were rated as moderate by 49.6% (n=124), low by 32.8% (n=82), and high by 13.6% (n=34). Environmental challenges were rated as moderate by 46.8% (n=117), low by 39.6% (n=99), and high by 7.6% (n=19). Legal challenges were rated as moderate by 45.6% (n=114), low by 39.2% (n=98), and high by 11.6% (n=29).

Geographic Variation in Challenge Assessment: Political challenges showed significant geographic variation: hospitals in central, northern, and northeastern states reported higher mean challenge scores (64.3±13.0) compared to hospitals in southern states (59.2±12.3; $t=3.05$, $p=0.003$), indicating that hospitals outside the southern region experienced comparatively greater political and policy-related challenges. In contrast, economic challenges were experienced relatively uniformly across all hospital categories, with no significant associations with state location ($t=1.64$, $p=0.101$), hospital type ($F=0.2$, $p=0.817$), settlement type ($t=0.09$, $p=0.926$), geographic setting ($F=0.1$, $p=0.919$), bed capacity ($t=0.3$, $p=0.742$), or quality accreditation status ($t=0.03$, $p=0.974$). This uniform experience of economic challenges suggests that financial pressures are systemic rather than organization-specific. Social, technological, environmental, and legal challenges also did not significantly vary across institutional characteristics (all $p>0.05$), indicating that these represent broadly shared challenges affecting the CHAI healthcare network regardless of organizational type or location.

Strategy Feasibility Assessment: Approximately 50–60% of hospitals perceived proposed strategies as moderately feasible across all PESTEL domains. Political strategies were rated as moderately feasible by 57.6% (n=144) of hospitals and highly feasible by 22% (n=55). Economic strategies were rated as moderately feasible by 52.4% (n=131) and highly feasible by 26% (n=65). Social strategies were rated as moderately feasible by 53.6% (n=134) and highly feasible by 26% (n=65). Technological strategies were rated as moderately feasible by 55.6% (n=139) and highly feasible by 23.6% (n=59). Environmental strategies were rated as moderately feasible by 59.6% (n=149) and highly feasible by 22% (n=55). Legal strategies were rated as moderately feasible by 50.4% (n=126) and highly feasible by 26.4% (n=66).

Associations between Institutional Characteristics and Strategy Feasibility: Institutional age was significantly associated with technological strategy feasibility ($F=3.49$, $p=0.032$). Hospitals established for more than 60 years reported higher mean technological strategy scores (70.6±12.9) compared to hospitals established for 41–60 years (66.8±13.2) and those established for 40 years or fewer (65.1±13.5). This suggests that organizational maturity and experience facilitate technological adaptation and innovation. Settlement type was significantly associated with social strategy feasibility ($t=2.35$, $p=0.020$). Urban and sub-urban hospitals reported higher mean social strategy scores (69.8±15.5) compared to rural hospitals (65.5±12.5), indicating that hospitals in urban settings perceived greater capacity for implementing community engagement and social intervention strategies. Geographic location was significantly associated with legal strategy feasibility ($t=2.39$,

p=0.018). Hospitals in southern states reported higher mean legal strategy scores (69.2±14.3) compared to hospitals in central, northern, and northeastern states (64.6±15.3), suggesting that regional differences in regulatory clarity or legal expertise influenced perceived capacity for compliance and legal strategy implementation.

Interconnections between Challenges and Institutional Characteristics: Analysis revealed important interconnections between challenge domains and organizational characteristics. Hospitals perceiving high economic challenges simultaneously reported constraints in implementing organizational development initiatives, suggesting that financial pressures limit capacity for addressing challenges in other domains. The absence of significant variation in economic challenge burden across hospital types indicates that financial sustainability is a universal concern affecting the entire CHAI network, suggesting that sectoral and policy-level interventions are required rather than organization-specific solutions.

DISCUSSION

The findings demonstrate that CHAI-affiliated hospitals navigate multidimensional external challenges requiring simultaneous attention to political, economic, social, technological, environmental, and legal pressures. The PESTEL framework reveals the complexity of healthcare organizational environments and the multiple simultaneous constraints affecting institutional functioning.

Economic Challenges as Systemic Pressures: The uniform experience of moderate economic challenges across all hospital categories—irrespective of geographic location, institutional type, bed capacity, or quality accreditation status—indicates that financial pressures are systemic rather than isolated to particular organizational contexts. This finding suggests that economic challenges arise from fundamental structural factors affecting faith-based healthcare institutions globally: dependence on low-income patient populations with limited payment capacity, rising operational costs and inflation, fluctuating donor funding, competitive pressures from corporate healthcare systems, and requirements for infrastructure and technology investment. The perception of moderate rather than high economic challenges by most hospitals may reflect either relatively stable financial situations or possibly optimistic assessments of challenging situations. Regardless, the universal concern suggests that financial sustainability deserves urgent attention through multiple interventions: diversified revenue models, improved financial management, donor relationship cultivation, advocacy for government support, and possibly innovative financing mechanisms including social enterprises, health microinsurance, and public-private partnerships.

Geographic Variation in Political Challenges: The significant association between political challenges and geographic location—with greater challenges reported in non-southern states—suggests that state-level governance environments, regulatory systems, and local socio-political dynamics substantially influence healthcare organizational functioning. This geographic variation may reflect differences in state government commitment to healthcare, consistency of policy implementation, relationships between government and non-governmental healthcare providers, clarity of regulatory requirements, and administrative capacity for healthcare governance. The implication is that organizations must maintain sophisticated political engagement strategies including advocacy, policy dialogue, and continuous adaptation to regional political contexts.

Organizational Maturity and Technological Adaptation: The significant association between institutional age and technological strategy feasibility—with older hospitals reporting higher capacity for technological adaptation—presents a counterintuitive finding. Conventional assumptions might suggest that newer organizations are more technologically progressive. However, the finding suggests that older, more established hospitals have accumulated organizational experience, knowledge, and institutional maturity that facilitate organizational change and technology implementation. These institutions may have developed stronger management structures, clearer decision-making processes, greater credibility with stakeholders, and more mature organizational cultures supporting innovation. The implication is that organizational experience and maturity may be assets for technological transformation, and institutions should leverage organizational experience in pursuing digital health initiatives.

Settlement Type and Community Engagement Capacity: The significant association between settlement type and social strategy feasibility reflects practical differences in community engagement capacity. Urban and sub-urban hospitals likely have larger accessible populations, greater availability of community resources and partner organizations, and sometimes larger institutional staff enabling community engagement activities. Rural hospitals face inherent constraints including dispersed populations, limited community organizations and resources, and small staff numbers limiting capacity for additional community engagement. The implication is that rural hospitals require context-appropriate community engagement models, targeted support, and recognition of resource limitations when setting community engagement expectations.

Theoretical Implications: The findings support theoretical understanding of healthcare organizations as complex adaptive systems operating within multidimensional external environments (De Savigny & Adam, 2009). The PESTEL analysis demonstrates that organizational functioning cannot be understood through isolated examination of single dimensions but requires integrated analysis of interconnected environmental pressures. The finding that most challenges are experienced similarly across organizational types suggests that these represent systemic challenges operating across the healthcare sector requiring multi-level responses including organizational adaptation, sectoral collaboration, and policy-level interventions.

Organizational Resilience: The moderate ratings of challenge severity (rather than consistently high ratings) across all PESTEL domains, combined with the perception that approximately 50–60% of proposed strategies are moderately to highly feasible, suggests that CHAI hospitals maintain organizational resilience despite facing substantial external pressures. This resilience may derive from mission-driven organizational values, community trust and institutional legitimacy, demonstrated adaptability in resource-constrained environments, and accumulated organizational experience. However, the perception of moderate rather than high feasibility for strategy implementation indicates that institutional capacity for change is constrained by resource limitations and organizational constraints.

Policy and Practice Implications

The findings have several important implications:

1. ***Systemic interventions are required:*** The uniform experience of economic and other domain challenges suggests that individual organizational efforts alone are insufficient. Sectoral-level collaboration (through CHAI networks), policy advocacy, and government support mechanisms are necessary for meaningful progress on systemic challenges.
2. ***Geographic context matters:*** The significant variation in political challenges by geographic location indicates that organizations must develop regionally-adapted strategies and that government policies should account for regional differences in governance environments and administrative capacity.
3. ***Organizational development supports strategic adaptation:*** The association between institutional age and technological strategy feasibility suggests that organizational development—including strengthened management systems, clearer decision-making processes, and institutional maturity—supports organizational capacity for change and innovation.

4. ***Context-appropriate interventions are essential:*** Strategies must be adapted to organizational and geographic contexts. Rural hospitals require differently designed interventions than urban institutions; newly established organizations may require different support than mature institutions.
5. ***Multi-level strategy is necessary:*** Addressing the multidimensional challenges revealed by PESTEL analysis requires interventions at organizational level (internal management and systems), sectoral level (industry standards, collaborative action), and policy/governance level (regulatory frameworks, resource allocation, policy environment).

CONCLUSION

CHAI-affiliated hospitals navigate complex, multidimensional external environments characterized by simultaneous pressures across political, economic, social, technological, environmental, and legal domains. While moderate challenges across all domains indicate substantial organizational pressures, most hospitals perceive moderate to high feasibility for implementing strategic interventions. Organizational maturity facilitates technological adaptation, and settlement characteristics influence community engagement capacity. The uniform experience of economic challenges across all hospital types indicates systemic financial pressures requiring sectoral and policy-level responses beyond organizational-level interventions. Strengthening institutional resilience and sustainable healthcare service delivery in faith-based organizations requires multi-level strategies combining organizational development, sectoral collaboration, government policy support, and evidence-informed adaptation to geographic and organizational contexts. Understanding faith-based healthcare organizations as complex adaptive systems operating within multidimensional external environments provides essential foundation for developing effective strategies supporting sustainable equitable healthcare delivery in underserved regions.

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