




“Workforce sustainability and quality of service in accredited hospitals in India: Mediating role of job engagement”

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WORKFORCE SUSTAINABILITY AND QUALITY OF SERVICE IN ACCREDITED HOSPITALS IN INDIA: MEDIATING ROLE OF JOB ENGAGEMENT

Abstract

The healthcare industry in India has witnessed remarkable growth and transformation in recent years, with a burgeoning demand for quality healthcare services. The sustainability of the healthcare workforce and the service quality of accredited hospitals are critical factors that significantly influence the overall healthcare system in India. This study aims to investigate the relationship between workforce sustainability, quality of healthcare service, and job engagement within the context of accredited hospitals in India. A descriptive research design is employed, and a structured questionnaire is used to gather primary data from the doctors and nurses as they have more burnout intentions at the workplace. The sample size of the study is 384 respondents: 86.2% are doctors and 13.8% are nurses. The study results reveal that unmarried doctors and nurses exhibit greater sustainability (with a score of 3.7767). Similarly, the millennial workforce demonstrates higher sustainability (scoring 3.8106) than the Gen X cohort (scoring 3.7775). Notably, doctors exhibit greater sustainability in the workplace (scoring 3.7772) when contrasted with nurses (scoring 3.6061). Job engagement varies with the annual income. The female workforce holds more favorable perceptions regarding the quality of healthcare service (scoring 3.8583). The study found that workforce sustainability, quality of healthcare service, and job engagement are positively correlated. Further, the study revealed that workforce sustainability positively and significantly impacts service quality in hospitals (22.4%), and job engagement mediates the workforce sustainability and quality of healthcare services.

Keywords

workforce sustainability, quality of healthcare service, job engagement, NABH accreditation, India

JEL Classification

J24, M12, I11, O53

INTRODUCTION

The human workforce is vital to any organization despite its nature, type, and complexity. The human workforce is a differential factor that makes an organization successful. The proper human workforce deployment is more critical, especially in knowledge-driven industries such as education, healthcare, information technology, etc. Workforce sustainability, quality of healthcare service, and job engagement collectively contribute to the overall patient experience and outcomes. An engaged and sustainable workforce is more likely to deliver high-quality care, leading to positive patient outcomes. The cost of healthcare services is closely tied to workforce efficiency and engagement. High job engagement and a commitment to workforce sustainability can positively influence staff retention, reducing the need for frequent recruitment efforts and associated costs. Healthcare organizations are constantly striving to improve the quality of their services. In the public healthcare system, the workforce is employed rationally, at least due to labor enactments. Although labor enactments and codes apply to



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the private healthcare system, it is common for the hospital workforce, especially medical professionals and nurses, to be overburdened and stressed. The quality of healthcare services directly impacts public health. Hospitals are crucial healthcare providers, and understanding the factors that affect service quality is essential for improving patient outcomes and overall health in India.

The healthcare sector in India faces various workforce challenges, including high turnover rates, recruitment difficulties, and skill shortages. Investigating these challenges and their impact on service quality is critical for addressing them effectively. Employee well-being is a significant concern, particularly in high-stress environments like healthcare. Understanding how workforce sustainability and job engagement affect employee satisfaction and well-being is essential for both staff and patient care. Research in this area can provide valuable insights into the factors that contribute to or hinder the success of quality improvement initiatives, allowing for the development of targeted strategies. Findings from studies on workforce sustainability, quality of healthcare service, and job engagement can inform healthcare policies at organizational and governmental levels. This is particularly important in designing interventions and incentives that promote a sustainable and engaged healthcare workforce.

Workforce sustainability and job engagement are key determinants of patient and employee satisfaction. Understanding the interconnectedness of these factors can help healthcare organizations implement practices that enhance satisfaction levels, positively impacting the overall healthcare ecosystem. As healthcare needs evolve, long-term planning becomes crucial. Investigating the relationship between workforce sustainability, quality of healthcare service, and job engagement can provide insights that support strategic planning for the future of healthcare delivery.

1. LITERATURE REVIEW

The availability of a skilled and motivated workforce is essential for health system performance and for developing a people-centered health system (WHO Regional Office for Europe, 2018). More than making the right workforce available, sustaining the right workforce in the health system is critical work of human resource managers. Workforce sustainability is “a supportive organizational environment that promotes employee well-being, and employee attitudes radiate this sense of well-being to customers and prospects” (Ofori-Boateng, 2021). A sustained workforce in an organization delivers a positive attitude, hard work, engagement, and better performance. As a result, the organization can also achieve its goals and gain a competitive advantage (Rich et al., 2010). Workforce sustainability can be achieved through executive modeling, learning opportunities, training and education, and mentorship (Ofori-Boateng, 2021). Workforce sustainability entails an organizational approach aimed at fostering a harmonious work-life balance and prioritizing the overall welfare of employees (Kossek et al., 2014). A sustainable workforce works in a caring and supportive business environment. Further,

employees should not be viewed as a resource that can be exploited to serve employers’ economic ends (Kossek et al., 2014). When employees are employed sustainably, they will perform their job well and be creative and innovative (Kossek et al., 2014). India’s healthcare sector is diversified and has a vast potential to grow. As a result, competition and investment in private healthcare have increased drastically. These growth opportunities in the healthcare sector are also kept open to private players.

Numerous workplace environments are not structured to foster their employees’ welfare and work-life balance (Kossek et al., 2014). Employers ought to consider both the current and future well-being and efficiency of their workforce (Kossek et al., 2014). Health workforce sustainability refers to recognizing that a strong workforce is a critical investment to improve the workforce’s well-being and economic prosperity (WHO Regional Office for Europe, 2018). Human assets are not to be considered limited resources but a renewable workforce that becomes richer over time (Ofori-Boateng, 2021). Achieving workforce sustainability involves the steps of recruiting and creating a conducive environment for individuals who are not only ca-

pable, skilled, and healthy but also ensuring the continuous development and retention of the necessary skills and competencies (Gambatese et al., 2019). The challenges of workforce sustainability are addressing skill shortages, dealing with workforce mobility, and improving motivation and employee retention (Buchan & Perfilieva, 2015). The assessment of workforce sustainability can be conducted by evaluating various sub-dimensions, including but not limited to “nurturing, diversity, equity, health and well-being, connectivity, value, community, and maturity” (WHO Regional Office for Europe, 2018). Service quality indicates the ability of the business organization or an individual to meet the customers’ quality expectations (Ramya et al., 2019). Service quality is essential to meet customers’ expectations and retain them (Carlsson & Kabir, 2010). Quality standards can exist individually from accreditation, and they can be specified through legislation, guidelines, and recommendations of national and international health organizations (Kourkouta et al., 2021). Service quality in hospitals attracts attention in the healthcare sector due to the competition (D’Cunha & Suresh, 2015) and accreditation requirements. Quality healthcare is consistently providing valuable and effective healthcare services to patients according to their health needs (Mosadeghrad, 2013). Three kinds of factors affect medical service quality: patient-related factors, physician-related factors, and environmental factors (Mosadeghrad, 2014). Physician-related factors include physician competency, motivation, and satisfaction (Mosadeghrad, 2014), essential components of workforce sustainability. Systemic changes in healthcare delivery optimize the quality and efficiency of healthcare services (OECD, 2017).

In engagement, the workforce employs and expresses themselves physically, intellectually, and

emotionally (Houle et al., 2022). Job engagement is an individual’s interest and involvement in his job, and engaged employees have higher job satisfaction and better mental health (Houle et al., 2022). Engagement leads to better job performance (Rich et al., 2010). It can be assessed using measures related to physical, cognitive, and emotional engagement (Rich et al., 2010). Health is one of the largest sectors that provides enormous employment. Two significant components of the Indian healthcare system are the public and private healthcare systems. India’s competitive advantage in healthcare is its pool of trained medical professionals (IBEF, 2022).

Foreign direct investment (FDI) in the drugs and pharmaceuticals sector amounted to \$19.90 billion. The Indian healthcare sector is expected to reach a market value of \$132.34 billion by 2022, with a projected growth of 17% (IBEF, 2022). The existing research indicates that workforce sustainability is a significant determinant of employee and organizational performance. The organization’s sustained workforce is more efficient, creative, and innovative. More studies in the healthcare sector need to focus on workforce sustainability and job engagement and their implications on the quality of healthcare services.

This study seeks to address the existing research gap by measuring and analyzing workforce sustainability in accredited hospitals in India. Furthermore, it aims to investigate how workforce sustainability impacts the quality of healthcare services provided by these hospitals. There is an argument that the medical profession is noble and needs to serve the public irrespective of day and time. The workforce in the field of medicine should be more socially responsible and more engaged.

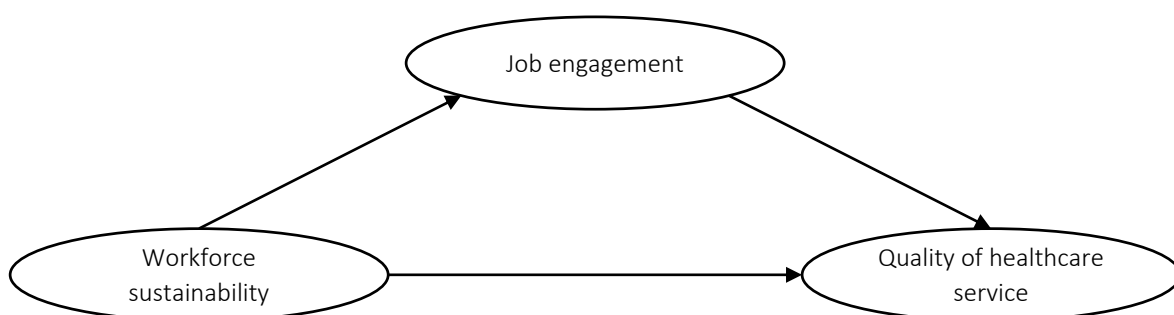


Figure 1. Proposed research model

Thus, a sustainable workforce fosters job engagement, leading to heightened morale and commitment, ultimately enhancing the quality of healthcare services. This positive feedback loop reinforces a culture of excellence within healthcare organizations. Job engagement catalyzes improved service quality, as engaged healthcare professionals are more likely to invest in continuous learning, collaborative efforts, and patient-centered care, directly contributing to enhanced service outcomes. Therefore, this study examines the role of job engagement in workforce sustainability and quality of healthcare service relations as a mediator. Following the literature review, Figure 1 shows the research model constructed.

The following hypotheses are framed and derived from the research model:

H1: Workforce sustainability significantly impacts the quality of healthcare services in accredited hospitals.

H2: Job engagement of the workforce significantly mediates the relationship between workforce sustainability and the quality of healthcare services in accredited hospitals.

2. METHODS

2.1. Research design

A descriptive research design is utilized, focusing on three key variables: workforce sustainability, job engagement, and quality of healthcare service. Primary data were collected through a specially developed questionnaire. The study's unit of analysis comprises physicians and nurses employed in hospitals accredited by the National Accreditation Board for Hospitals & Healthcare Providers (NABH) in Bangalore, India. The questionnaire consists of two sections: the first section gathers demographic information about the sample units, while the second section assesses the central variables of the study, including workforce sustainability, job engagement, and quality of healthcare service. The study was conducted continuously from May 2022 to November 2022.

2.2. Sample design

The population under consideration for this study comprises physicians and nurses employed in NABH-accredited hospitals throughout India. However, for practical reasons, the study focuses on physicians and nurses working in NABH-accredited hospitals in Bangalore. The choice of NABH-accredited hospitals ensures uniformity and standardization of healthcare services across the selected hospitals. According to Krejcie and Morgan's (1970) guidelines, when the population size exceeds 250,000, a sample size of 384 is appropriate for a 95% level of significance. Therefore, the chosen sample size for this study is 384 (Krejcie & Morgan, 1970). The study employs a purposive sampling technique to select participants from this pool of healthcare professionals.

2.3. Measurement of the variables

Workforce sustainability, job engagement, and quality of healthcare service are measured using appropriate scales available in the literature. Measurement scales that are employed in this study are presented in Table 1.

Table 1. Measurement scales employed

Construct	Source	Statements
Workforce sustainability	Gambatese et al. (2019)	42
Job engagement	Rich et al. (2010)	18
Quality of service	Parasuraman et al. (1988)	23

Workforce sustainability is measured using sub-dimensions such as nurturing, diversity, equity, health and well-being, connectivity, value, community, and maturity. Job engagement is quantified through physical engagement, cognitive engagement, and emotional engagement dimensions. Quality of healthcare service is measured using reliability, assurance, responsiveness, empathy, and tangibles. Statements on a five-point scale are used to measure workforce sustainability, job engagement, and quality of healthcare service of the sample units.

2.4. Pilot study

A preliminary study was conducted to assess the reliability of the scales and the research instru-

ment. In this preliminary study, a total of fifty-five responses were collected. The obtained alpha (α) scores for the different constructs are: workforce sustainability ($\alpha = 0.903$), job engagement ($\alpha = 0.757$), and quality of healthcare service ($\alpha = 0.835$). These alpha scores indicate the internal consistency or reliability of the measurement scales for each construct. A higher alpha score suggests greater reliability, indicating that the items within each construct consistently measure what they are intended to measure. In this case, the obtained alpha scores generally indicate good to excellent reliability for the scales used in the study.

3. RESULTS

The collected data were cleaned and tested for normality. Normality tests convey that workforce sustainability, job engagement, and quality of healthcare service are not normally distributed.

50.5% of the sample units are female. 60.2% of the respondents are married. 58.9% of the sample units are Gen Y, and 29.4% are Gen X. 51.3% are nurses, 48.7% are doctors; 86.2% have work experience of up to seven years. 66.1% earn up to Rs 3,00,000 per annum. Variances in perceptions of the sample units are analyzed and presented in Tables 2-4.

Table 2. Variances in workforce sustainability

Factor	Significance value	Result
Gender	0.884	No difference
Marital status	0.008	Difference exists
Age	0.057*	Difference exists
Job category	0.001	Difference exists
Work experience	0.164	No difference
Annual income	0.054	No difference

Note: * 10% level of significance.

Workforce sustainability varies from sample unit to sample unit based on marital status, age, and job category. On the other hand, workforce sustainability does not differ according to gender, work experience, and annual income of the sample units (Table 2).

Table 3. Variances in job engagement

Factor	Significance value	Result
Gender	0.321	No difference
Marital status	0.445	No difference
Age	0.226	No difference
Job category	0.667	No difference
Work experience	0.156	No difference
Annual income	0.057*	Difference exists

Note: * 10% level of significance.

Job engagement does not differ according to gender, marital status, age, job category, and work experience of the sample units (Table 3). Job engagement differs based on the annual income of the sample units.

Table 4. Variances in the quality of healthcare service

Factor	Significance value	Result
Gender	0.050	Difference exists
Marital status	0.056*	Difference exists
Age	0.171	No difference
Job category	0.456	No difference
Work experience	0.137	No difference
Annual income	0.437	No difference

Note: * 10% level of significance.

The quality of healthcare service does not differ according to age, job category, work experience, and annual income of the sample units (Table 4). In contrast, the quality of healthcare service differs based on the gender and marital status of the sample units.

Table 5. Relationship analysis of the variables

Particulars	Workforce sustainability	Job engagement	Quality of healthcare service
Workforce sustainability	1		
Job engagement	0.706	1	
Quality of healthcare service	0.285	0.381	1

Relationships of the core variables are presented in Table 5. Workforce sustainability and job engagement are positively and strongly related to each other. Workforce sustainability and quality

ty of healthcare service are positively correlated. Further, job engagement and quality of healthcare service are also positively related.

The impact of workforce sustainability on the quality of healthcare service of doctors and nurses and the mediating role of job engagement on workforce sustainability and quality of healthcare service are analyzed through mediation analysis. The impact of workforce sustainability on the quality of healthcare service of doctors and nurses and the mediating role of job engagement on workforce sustainability and quality of healthcare service is analyzed using the PROCESS model 4 (Hayes, 2012). The results are presented in Tables 6 to 11.

Table 6. Research model overview

Correlation	R-Square	MSE	F-value	Significance
0.4578	0.2096	0.1919	101.2759	0.000

Note: Outcome Variable: Job engagement.

Tables 6 and 7 exhibit the impact of workforce sustainability on job engagement (mediator) and model fit. The model chosen is significant (Table 6). Workforce sustainability significantly impacts job engagement (p-value: 0.000) (Table 7). Workforce sustainability affects job engagement by 41.25%.

Table 7. Model specifications

Details	Coefficient Value	Std. Error	t-value	Significance
Constant	2.0670	0.1529	13.5190	0.000
Workforce sustainability	0.4125	0.0410	10.0636	0.000

Note: Outcome Variable: Job engagement.

The results of job engagement as a mediator are presented in Tables 8 and 9. Table 8 shows that the model is significant. 16.65% variance in the quality of healthcare service is explained by job engagement and workforce sustainability.

Table 8. Research model summary

Correlation	R-Square	MSE	F-value	Significance
0.4081	0.1665	0.2102	38.0633	0.000

Note: Outcome variable: Quality of healthcare service.

The coefficients of the model are presented in Table 9. Workforce sustainability and job engagement significantly impact the quality of healthcare service of the sample doctors and nurses.

Table 9. Model coefficients

Details	Coefficient Value	Std. Error	t-value	Significance
Constant	3.0138	0.1946	15.4896	0.000
Workforce sustainability	0.2224	0.1483	4.6091	0.000
Job engagement	0.4657	0.0535	8.6964	0.000

Note: Dependent variable: Quality of healthcare service.

Table 10. Direct effect of the research model

Effect Size	Standard Error	t-value	Significance
0.2224	0.1483	4.6091	0.000

The study’s findings indicate a significant direct relationship between workforce sustainability and the quality of healthcare service, with a noteworthy explanatory power of 22.24%, as shown in Table 10. Additionally, the total indirect effect of job engagement on the relationship between workforce sustainability and the quality of healthcare service is calculated to be 19.21%, and this indirect effect is also statistically significant. These results suggest that workforce sustainability substantially influences the quality of healthcare service, and job engagement plays a significant role in mediating the relationship between workforce sustainability and the quality of healthcare service.

Table 11. Indirect effect of the research model

Mediator	Effect	SE	BootLLCI	BootULCI
Job engagement	0.1921	0.0353	0.1272	0.2672

The research results, as presented in Tables 6 to 11, clearly demonstrate that workforce sustainability significantly affects the quality of healthcare service the sample units provide. Furthermore, the findings provide strong evidence that job engagement significantly mediates the relationship between workforce sustainability and the quality of healthcare service delivered by doctors and nurses in NABH-accredited hospitals. This result underscores the importance of workforce sustainability and its connection with job engagement in enhancing the quality of healthcare services in these hospitals.

4. DISCUSSION

Human assets are essential to any knowledge-driven industry, including the healthcare industry. Human assets are to be utilized ra-

tionally and optimally. Human resources in any organization should be protected from being exploited to meet employers' goals. If employees are exploited, the costs are work stress, mental health problems, attrition, and an unstable workforce. Human assets are to be sustained. Workforce sustainability is a concept that emphasizes the optimum utilization of human resources in the workplace to promote mental health, well-being, and performance. It leads to better job and organizational performance. A sustained workforce with better creativity and an innovative mindset are essential requirements for organizations to be competitive.

In hospitals, doctors and nurses work tirelessly in treating patients. In private hospitals in India, although there are rules and policies on workforce employment, they are compromised for the sake of profitability. The private hospitals practice this without understanding that private hospitals will be on the losing side in the long run. The over-utilized workforce in the hospitals tends to provide inferior service to the patients. As a result, not only the patients but also the reputation of the hospitals will be affected.

This paper studied the relationship between workforce sustainability and the quality of healthcare service in accredited hospitals in India. Further, mediation of job engagement in the above-stated relation was assessed. Differences in workforce sustainability, job engagement, and quality of healthcare service of doctors and nurses were analyzed. The results convey that workforce sustainability varies from sample unit to sample unit based on marital status, age, and job category. Mean scores indicate that the single respondents are more sustained (3.7767) than the married counterparts (3.6320).

Similarly, the millennial workforce is more sustained (3.8106), followed by Gen X (3.7775). Doctors are a more sustained workforce in the workplace (3.7772) than nurses (3.6061). Job engagement differs according to the annual income of the sample units. Mean scores convey that the lower the annual income, the lower the job engagement; the higher the annual income, the higher the job engagement. The female

workforce has a better quality of healthcare service perceptions (3.8583) than the male workforce (3.8165). Single respondents have better perceptions of the quality of healthcare service (3.9187) than the married workforce (3.8285). Correlation results reveal that workforce sustainability is positively and strongly related to job engagement. So, it can be understood that workforce sustainability leads to better job engagement.

Further, regression results show that workforce sustainability significantly impacts the respondents' healthcare service quality. Job engagement mediates workforce sustainability and the quality of healthcare service. The hospitals may realize the need for workforce sustainability and its contributions to the quality of healthcare service and job engagement.

Understanding that workforce sustainability varies based on marital status, age, and job category suggests targeted interventions are needed. Initiatives tailored to the specific needs and challenges faced by married individuals, different age groups, and various job categories can enhance overall sustainability and job satisfaction. The finding that single respondents exhibit higher workforce sustainability scores than married counterparts emphasizes the importance of considering the unique needs and pressures married individuals face. Organizations may explore policies or support mechanisms that address married employees' specific challenges to enhance their sustainability. Recognizing that millennials demonstrate higher sustainability scores than Gen X implies the necessity of adapting organizational practices to meet the preferences and expectations of different generations. Tailoring engagement strategies and support systems to align with generational preferences can contribute to a sustained and motivated workforce. The observed difference in workforce sustainability between doctors and nurses highlights the importance of acknowledging and addressing the distinct challenges healthcare professionals face in different roles. Strategies aimed at sustaining nurses may need to differ from those tailored for doctors, considering the unique demands of each role.

The correlation between annual income and job engagement suggests that financial considerations affect employee engagement. Organizations may need to explore ways to ensure fair compensation and benefits, particularly for lower-income groups, to enhance overall job engagement and satisfaction. The finding that the female workforce perceives a higher quality of healthcare service than their male counterparts suggests that gender-specific factors may influence the perception of service quality. Addressing gender-specific concerns and preferences can improve overall service quality and satisfaction. The positive and strong correlation between workforce sustainability and job engagement reinforces the importance of promoting sustainability initiatives. Organizations should invest in strategies that enhance workforce sustainability, recognizing its direct link to increased job engagement

and improved overall performance. The significant impact of workforce sustainability on the quality of healthcare service highlights the importance of sustained efforts in maintaining a resilient workforce. Organizations prioritizing workforce sustainability are likely to see positive outcomes in improved service quality and patient satisfaction. The mediation role of job engagement between workforce sustainability and healthcare service quality underscores the need for comprehensive strategies. Fostering job engagement becomes a crucial mechanism through which workforce sustainability positively influences service quality, emphasizing the interconnectedness of these factors. Thus, organizations should adopt targeted and nuanced approaches to enhance workforce sustainability, considering demographic differences and specific challenges different groups face.

CONCLUSION

This study examines how the sustainability of the workforce influences service quality in accredited hospitals in India, focusing on job engagement as a mediating factor. The survey method was used to gather primary data from doctors and nurses in NABH-accredited hospitals. The collected data underwent reliability and normality testing, indicating the reliability of scales and research instruments, while normality was not observed. The study identified variations in workforce sustainability based on marital status, age, and job category. Job engagement was found to vary with the annual income of the workforce, and female employees demonstrated a higher quality of service. The study established a significant impact of workforce sustainability on service quality. Additionally, it revealed that job engagement is a significant mediator in the relationship between workforce sustainability and service quality in NABH-accredited hospitals in India.

AUTHOR CONTRIBUTIONS

Conceptualization: Nagendrappa Prakash.

Formal analysis: Nagendrappa Prakash, Arjunan Satya Nandini.

Investigation: Nagendrappa Prakash, Arjunan Satya Nandini.

Methodology: Nagendrappa Prakash, Arjunan Satya Nandini.

Resources: Nagendrappa Prakash.

Software: Nagendrappa Prakash.

Supervision: Arjunan Satya Nandini.

Validation: Nagendrappa Prakash.

Visualization: Arjunan Satya Nandini.

Writing – original draft: Nagendrappa Prakash, Arjunan Satya Nandini.

Writing – review & editing: Arjunan Satya Nandini.

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