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RESEARCH ARTICLE

Happy Staff, Happy Patients: The Power of Employee Engagement and Communication in Healthcare Success

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Abstract: This study examines the impact of employee communication and involvement on patient happiness in healthcare organizations. With a focus on the mediating function of communication, the main goal is to investigate how healthcare workers' emotional and psychological dedication to their jobs enhances the patient experience. Patient care quality is directly impacted by employee engagement, a critical component that affects both individual and organizational performance. Furthermore, effective communication within teams and between healthcare providers and patients has been shown to enhance collaboration, reduce errors, and foster trust, which directly influences patient satisfaction.

The study focuses on healthcare professionals from various departments within a healthcare institution, employing a quantitative methodology. Data were collected through both online and in-person surveys, and the sample included administrative and clinical staff from multiple healthcare institutions. The hypotheses, including the potential mediating role of communication in the relationship between patient satisfaction and employee engagement, were statistically tested using Partial Least Squares (PLS) analysis. The findings indicate a robust positive relationship between employee engagement and patient satisfaction. Engaged employees are more likely to deliver high-quality treatment because they are more enthusiastic, committed, and driven. Better patient experiences are directly tied to this.

Additionally, it has been demonstrated that communication mediates this association, indicating that motivated staff members can effectively convey their enthusiasm through clear, compassionate, and successful patient interactions, thereby enhancing patient satisfaction. This research emphasizes the crucial role of communication in enabling the benefits of involvement and transforming them into observable results for patients. The study argues that healthcare organizations should prioritize both employee engagement and effective communication strategies to enhance patient care and satisfaction. Such initiatives promote staff well-being and effective two-way communication, which in turn enhance workplace satisfaction and improves patient care outcomes in healthcare organizations.

Keywords: Employee Engagement, Communication, Patient Satisfaction, Healthcare Organizations

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1. Introduction

Healthcare relies heavily on the staff's ability to communicate effectively and collaborate; this aspect is also vital for patient satisfaction. Better performance and organizational outcomes have been linked to employee engagement, which is defined as a cognitive, emotional, and physical investment in the organization (Kahn, 1990). Employed staff demonstrate high self-motivation, commitment, and productivity, thereby providing quality care (Kang et al., 2020). This engagement correlates with improved patient outcomes, as involved workers are more efficient, collaborate effectively, communicate concisely, and adequately address patient concerns (Barton, 2022). Strong relationships between patients and healthcare professionals are fostered by effective communication, which enhances trust, improves treatment adherence, and promotes overall satisfaction (Versluijs et al., 2021). Better healthcare experiences and increased patient satisfaction are two benefits of a physician's ability to interact with patients in an open and empathetic manner (Buller & Buller, 1987). Nevertheless, many healthcare organizations fail to employ effective, formalized strategies to enhance communication, a notable oversight given the heightened importance of the outcome. This lack of focus in epistemology underscores the need for comprehensive frameworks that account for these factors and their impact on patient outcomes and quality of care (Al-Abri & Al-Balushi, 2014).

This study aims to bridge these gaps by demonstrating how organizational culture can be leveraged to enhance patient satisfaction and foster employees' engagement, and vice versa. This study is significant because it has the potential to address substantial challenges in healthcare administration. Enhancing communication and engagement can help prevent issues such as employee fatigue and attrition, thereby ensuring operational resilience and service continuity (Welch, 2011). This study closes a significant gap by investigating the role that communication plays in mediating the relationship between employee engagement and patient satisfaction. Through an interdisciplinary lens, this strategy contributes to the body of knowledge by linking communication and engagement as essential components of patient care. It also provides valuable insights into further academic research.

2. Literature Review

2.1. Theoretical Exposition /Underpinning Theory

Employee engagement and communication in healthcare organizations are deeply rooted in psychological and organizational theories, which explain how human needs, motivations, and behaviors influence work engagement and patient satisfaction. Kahn's Work Engagement Theory (1990) focuses on the psychological conditions—meaningfulness, safety, and availability—that promote deep engagement at work. This theory collectively supports the relationship between employee engagement, communication, and patient satisfaction in healthcare environments.

2.2. Kahn's Work Engagement Theory (1990)

Engagement, according to William Kahn, is the process by which people use all their skills in their jobs (Bhuvanaiah & Raya, 2014). People participate in this process at the physical, cognitive, and emotional Levels, giving their full attention to the work they do (Kumar, 2021). In the studies on employee engagement, Kahn found that physical, cognitive, and emotional engagement are the three principal dimensions that influence how workers relate to their jobs. Physical engagement refers to the effort individuals invest in their work. Kahn explained how some workers feel like they are "flying around" when they are entirely focused, giving their best effort, and feeling inspired by their job. Cognitive engagement refers to how employees understand their role within the broader organizational context. Employee engagement is higher when employees are aware of the company's vision and strategy, and of how their jobs contribute to those goals. Emotional engagement refers to the emotional connection that workers have with their company. Employees are more likely to feel an emotional connection to their workplace when companies build strong relationships, foster excellent team dynamics, and support their management (Huang et al., 2022).

2.3. Employee Engagement

Employee engagement is a vast term that is defined differently by different experts:

Kahn's Work Engagement Theory (1990) introduced the idea of employees investing their whole selves into their roles, setting the stage for modern engagement studies (Saks & Gruman, 2014). Numerous studies have demonstrated a complex relationship between employee engagement and other organizational-related concepts, including job satisfaction, job involvement, organizational behavior, and burnout (Kaliannan & Adjovu, 2015). Gallup Q12 Model (2020) Revolutionized employee engagement measurement, focusing on key drivers like teamwork, recognition, and growth opportunities (Sorenson, 2013).

However, there are potential downsides, including work-life imbalance, burnout from excessive expectations, and the risk of inequality if engagement is not rewarded appropriately or considered alongside diverse employee needs. Furthermore, placing too much emphasis on engagement can sometimes mask underlying issues in organizational practices or fail to address deeper systemic challenges (Truss et al., 2013).

2.4. Communication

Different definitions of communication reflect its dynamic and complex nature. Shannon and Weaver (1949) defined communication as "the process of transmitting information from a sender to a receiver

through a channel, potentially disrupted by noise". However, according to Barnlund's transactional model (1970), communication is "a continuous, reciprocal process where meaning is co-created by participants." This perspective is especially pertinent to contemporary patient-centered care, where it is crucial to recognize and address each patient's and their family's particular concerns. (Barnlund, 1970a).

It was noted that it enhances decision-making, reduces medical errors, and improves health outcomes by facilitating cooperation between medical personnel. However, when done poorly, it can lead to a wide range of repercussions, including incorrect diagnoses, inappropriate treatments, and low satisfaction. Furthermore, this leads to work ineffectiveness, which in turn reduces service quality, increases interterm rivalry, and causes stress among healthcare workers (Cm & Vl, 2018).

2.5. Patient Satisfaction

Patient satisfaction is a critical aspect of healthcare quality that affects both the effectiveness of service delivery and patient retention. Patients who are satisfied with the facility are more likely to recommend it and return for treatment, thereby enhancing its success and reputation (Al-Abri & Al-Balushi, 2014). Additionally, understanding patient satisfaction helps healthcare providers identify areas for improvement, contributing to a higher quality of service (Goodrich & Lazenby, 2023).

2.6. Employee Engagement with Communication

Employee engagement and communication are intrinsically linked in creating a positive work environment that fosters high levels of performance. Studies reveal that when employees engage in two-way communication, they feel valued and motivated, which enhances their engagement (Kahn, 1990). For instance, the Gallup Q12 Model emphasizes communication as one of the key drivers of employee engagement, influencing their willingness to invest cognitive, emotional, and physical energy into their roles (Gallup, 2020). Without effective communication, employees may experience ambiguity and disengagement, hindering organizational performance. (Kumar, 2021). Effective communication in healthcare organizations promotes employee satisfaction, fosters a more cohesive work environment, and enhances employee engagement (Bakker & Albrecht, 2018). The overall organizational health of healthcare firms can be improved by enhancing subordinates' morale and cooperation, and, in turn, the outcomes of patient care, if management accords high priority to the communication plans that are accorded precedence.

2.7. Employee Engagement with Patient Satisfaction

However, in the healthcare context, the relationship between employee engagement and patient satisfaction is crucial. The levels of therapeutic empathy, service responsiveness, and member satisfaction among involved employees are determinants of the patient experience (Gill et al., 2021). Enhancing employee commitment enables them to fulfill their duties appropriately, thereby providing quality care (Kahn, 1990). Ultimately, fostering employee engagement is a crucial consideration for healthcare organizations seeking to enhance patient satisfaction.

2.8. Mediating Role of Communication between Employee Engagement and Patient Satisfaction

Effective communication lays the foundation for patient satisfaction, fosters trust and collaboration, and ultimately leads to improved health outcomes. Communication acts as a bridge between employee engagement and patient satisfaction, enabling employees to effectively channel their motivation and skills

into patient care (Barnlund, 1970a). Clear lines of communication must exist both internally (between employees) and externally (with patients) to enable staff to convert their efforts into actionable care. This connection can be disrupted by poor communication, leading to inefficiency and dissatisfaction. The mediating role of communication ensures that the benefits of employee engagement are fully realized, addressing both organizational and patient-centered goals. (Amporfro et al., 2021). This emphasizes the need for healthcare organizations to invest in communication training and technologies to maintain an intense employee-patient satisfaction dynamic.

2.9. Research Hypotheses

H1: Employee engagement has a positive and significant relationship with effective communication.

H2: Employee engagement positively impacts patient satisfaction.

H3: Communication mediates the relationship between employee engagement and patient satisfaction.

These are the general assumptions of the study from which specific hypotheses relevant to identifying the dynamics between variables that enhance the Value of healthcare delivery systems are derived.

2.10. Conceptual Framework

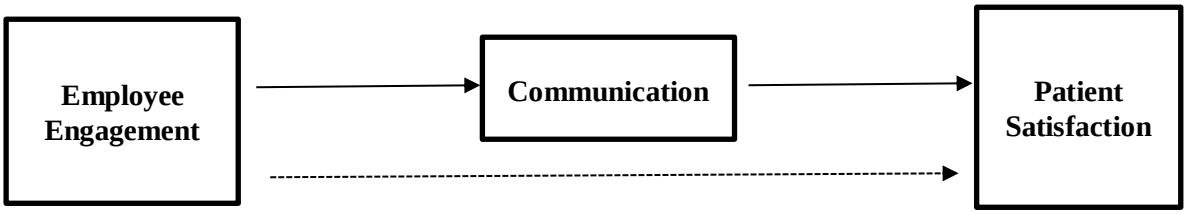

Figure 1: conceptual framework

3. Research Methodology

3.1 Research Philosophy

The purpose of this study is to empirically examine the proposed relationships through quantitative research techniques, including questionnaires and statistical analysis. The objective is to generate robust, evidence-based findings that enhance our understanding of how employee engagement and communication impact patient satisfaction.

3.2 Research Approach and Type

A deductive research approach is employed in this study, as it aligns with the study concept and the nature of the research question. This study will involve structured questionnaires to collect data from patients and other healthcare personnel in the healthcare organization. The collected data shall be analyzed to establish the validity of the hypothesized relationships between patient satisfaction, communication, and employee engagement in this specific context.

3.3 Research Design

A causal research method, particularly suitable for establishing and comparing cause-and-effect relationships between variables, is employed in this study (Esbensen et al., 2002). The data will be analyzed statistically for both reliability and validity, given that the data collected will be primary. As a result, the following research methodology aims to establish a relationship between employee engagement, communication, and patient satisfaction in healthcare settings.

3.4 Population

The target population for this study comprises all healthcare workers and patients who treat and visit Memon Hospital, located on Burns Road, Karachi. Since it was not possible to collect data from multiple healthcare institutions in a short time, Memon Hospital was chosen as a convenient source.

3.5. Sample size and Sampling technique

In this study, the sample size was 143 participants, allowing for the efficient handling of data collection and analysis while providing sufficient data to support the important findings. The practical constraints, including time, available resources, and participants' access, were closely considered when determining the sample size.

3.6. Data Collection Method

Questionnaires are ideal when studying relations between variables and when obtaining consistent data that should be analyzed in a structured manner (Saunders, 2009). The paper and digital versions of the questionnaire shall be used to collect data for this study. The data collection phase took three weeks.

3.7. Research Instrument

Regarding the data collection method employed in this study, a quantitative research approach was adopted. The assessment tools were close-ended questionnaires designed to elicit accurate, uniform responses from participants. The questionnaire consisted of 42 items, including dimensions of employee engagement, communication, candor, and patient satisfaction. This part of the research uses a Likert scale.

Table 1: Summary of research instruments

Variable	Authors / Source	No. of items	Scale
Employee engagement	(Rodriguez, 2024)	12	1-5
Communication	(Kasat et al., 2020)	12	1-5
Patient satisfaction	(Alqahtani, 2013)	18	1-5

3.8. Data Analysis – Software and Techniques

The comprehensive data analysis conducted in this study, utilizing SmartPLS software, included reliability testing, correlation analysis, and descriptive statistics. Cronbach's alpha was used to assess the reliability of the measurement scales, ensuring their internal consistency. The application of PLS-SEM facilitated strong modeling of the structural relationships among constructs (Partial Least Squares Structural Equation Modeling), enabling the evaluation of patient happiness, communication, and employee engagement (Sarstedt et al., 2021).

4. Results

4.1. Measurement and Assessment PLS-SEM Path Model

Partial Least Squares Structural Equation Modeling (PLS-SEM) was the quantitative method employed in this study to assess the impact of the examined variables. A total of 143 replies were collected for this study. There are two steps involved in evaluating the PLS-SEM path model: measurement model assessment and structural model assessment. The measurement model, which considers the validity and reliability of the constructs, is the first phase. Reliability metrics, such as Cronbach's alpha and composite reliability, are used to assess validity and ensure that the indicators within each concept align accurately. Since the Average Variance Extracted (AVE) is used to evaluate convergent validity, each construct must have a comparatively high communality with its own set of items. However, the Heterotrait-Monotrait ratio (HTMT), which indicates that the constructs are sufficiently distinct from one another, is used to evaluate discriminant validity (Sarstedt et al., 2021).

4.2. Outer Model Assessment

Tests of indicator loadings, convergent validity, discriminant validity, and internal consistency reliability are used to evaluate the structural and reflective models.

4.3. Indicator Loadings

The validity and reliability of the measurement model in PLS-SEM depend primarily on the indicator loadings. Outer loadings were also determined to assess the instrument's validity.

Table 2: Outer loading

Construct	Items	Loading	Cronbach's alpha	Composite reliability (rho_c)	Average variance extracted (AVE)
Employees engagement			0.904	0.919	0.489
	EE1	0.696			
	EE10	0.700			
	EE11	0.750			
	EE12	0.600			
	EE2	0.706			
	EE3	0.785			
	EE4	0.693			
	EE5	0.603			
	EE6	0.697			
	EE7	0.690			
	EE8	0.662			
	EE9	0.783			
Communication			0.889	0.909	0.500
	C1	0.686			
	C10	0.769			
	C11	0.684			

	C12	0.675			
	C2	0.710			
	C3	0.718			
	C4	0.719			
	C5	0.739			
	C8	0.656			
	C9	0.710			
Patient Satisfaction			0.874	0.899	0.476
	PS1	0.725			
	PS11	0.601			
	PS15	0.548			
	PS18	0.540			
	PS2	0.743			
	PS3	0.743			
	PS4	0.819			
	PS5	0.662			
	PS6	0.724			
	PS8	0.735			

4.4 Internal Consistency Reliability

Cronbach's alpha and composite reliability are two measures commonly used to assess a scale's internal consistency. In this study, composite reliability was estimated to fall between 0.899 and 0.919, and Cronbach's coefficients were between 0.874 and 0.904, respectively.

Table 3: Internal consistency reliability

Construct	Cronbach's alpha	Composite reliability (rho_c)
Communication	0.889	0.909
Employees Engagement	0.904	0.919
Patient Satisfaction	0.874	0.899

4.5.Convergent Validity

Convergent validity is one of the most important criteria for assessing the relationship among multiple indicators of a particular construct, providing a holistic examination of the construct. Table 4 shows that all constructs in this investigation meet the convergent validity standard, as the AVEs are all close to 0.50. This demonstrates that all the constructs of this investigation exhibit significant improvement in convergent validity.

Table 4: Average variance extracted

Construct	Average variance extracted (AVE)
Communication	0.500

Employees Engagement	0.489
Patient Satisfaction	0.476

4.6.Discriminant Validity

Discriminant validity is important because it demonstrates that the constructs are distinct and do not overlap or tap into a common underlying construct. The HTMT values in this investigation are all below 1, indicating acceptable discriminant validity and implying that the developed model is sound.

Table 5: Heterotrait Monotrait ratio (HTMT)

	Heterotrait-Monotrait ratio (HTMT)
Employees Engagement <-> Communication	0.746
Patient Satisfaction <-> Communication	0.663
Patient Satisfaction<-> Employees Engagement	0.534

4.7.Inner Model Assessment

Following evaluation of the outer model, the next step is to evaluate the inner model, which focuses on the constructs' structural aspects. Moreover, the coefficient of determination (R^2) is used to assess the model's explanatory power.

4.8. Multicollinearity Test

Multicollinearity occurs when there is a high correlation between two or more variables, which can significantly affect test results, particularly those outside regression analyses. To check for multicollinearity, statistical measures such as tolerance values and VIF values are used. As shown in Table 7, the VIF and tolerance values are below the threshold; therefore, we can conclude that multicollinearity is not a problem among the constructs.

Table 6: Variance inflation factor

Variables	**C**	**EE**	**PS**
C	0.707		
EE	0.684	0.699	
PS	0.591	0.484	0.690

Table 7: Outer VIF Value

Construct		**VIF**
Communication		
	C1	1.728
	C10	2.082
	C11	2.032
	C12	1.853
	C2	2.173
	C3	1.937
	C4	2.031
	C5	2.243
	C8	1.598
	C9	1.958

Employees Engagement	EE1	1.858
	EE10	2.020
	EE11	2.169
	EE12	1.642
	EE2	1.821
	EE3	2.440
	EE4	1.728
	EE5	1.625
	EE6	1.998
	EE7	1.810
	EE8	1.744
	EE9	2.642
Patient Satisfaction	PS1	2.058
	PS11	1.544
	PS15	1.301
	PS18	1.432
	PS2	1.950
	PS3	1.852
	PS4	2.393
	PS5	1.682
	PS6	1.808
	PS8	1.843

4.9. Coefficient of Determination R2

A higher R^2 Value indicates that the constructs used to operationalize the Model predictors are effective at explaining the variance in the outcome variable.

The R^2 values for the study constructs are 0.468 and 0.361, which typically range from 0 to 1. Based on these values, the model exhibits a decent Level of predictive ability. Namely, analyzing Employee Engagement (EE), $R^2 = 0.468$ was obtained, indicating that changes in EE can account for 46.8% of changes in Communication (C). In addition, by analogy, the statistical significance of the Employee Engagement and Communication contribution was defined, accounting for 36.1% of the variation in Patient Satisfaction (PS).

Table 8: Coefficient of Determination

	R-square	Explanatory Power
Communication	0.468	Good
Patient Satisfaction	0.361	Good

4.10. Path Analysis

Following the evaluation of collinearity and R^2 values, the study proceeds to a thorough examination of the model's relationships. The primary objective of this analysis is to verify the proposed hypotheses and provide empirical support for the relationships outlined in the conceptual framework.

Table 9: Path Analysis

Hypotheses		Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Result
H1	Employee Engagement -> Communication	0.684	0.692	0.050	13.786	0.000	Supported
H2	Employee Engagement -> Patient Satisfaction	0.151	0.150	0.089	1.689	0.091	Supported

H3	Communication -> Patient Satisfaction	0.487	0.500	0.083	5.839	0.000	Supported

According to Hypothesis 1 (H1), EE should have a direct effect on C. The investigation's results are impressive, revealing a positive path coefficient (P = 0.000 and t = 13.786) that supports the idea that the focal independent variable, Employee Engagement, is positively related to the dependent variable, communication. This validates these constructs and, in effect, affirms H1: these are strong positivist relationships.

Hypothesis 2 (H2) assessed the correlation between two variables: EE and PS. The data indicate a positive correlation between the two variables (P = 0.091, t = 1.689). Although the observed association attained statistical significance, the same was slightly marginal; that is, on the edge of conventional significance levels (P < 0.05), indicating that Employee Engagement somewhat impacted Patient Satisfaction.

As formulated in Hypothesis 3 (H3), Communication (C) fully mediates the relationship between Employee Engagement (EE) and Patient Satisfaction (PS). Appendix B But the Communication that can facilitate the effect of EMPLOYEE ENGAGEMENT on PATIENT SATISFACTION is supported by the mediation effect, asserting an indirect relationship with the significant Value P = 0.000 and t = 5.331.

These results supported the centrality of Employee Engagement and Communication as items contributing to the alteration, underlining their prominence in the model and testing the proposed links.

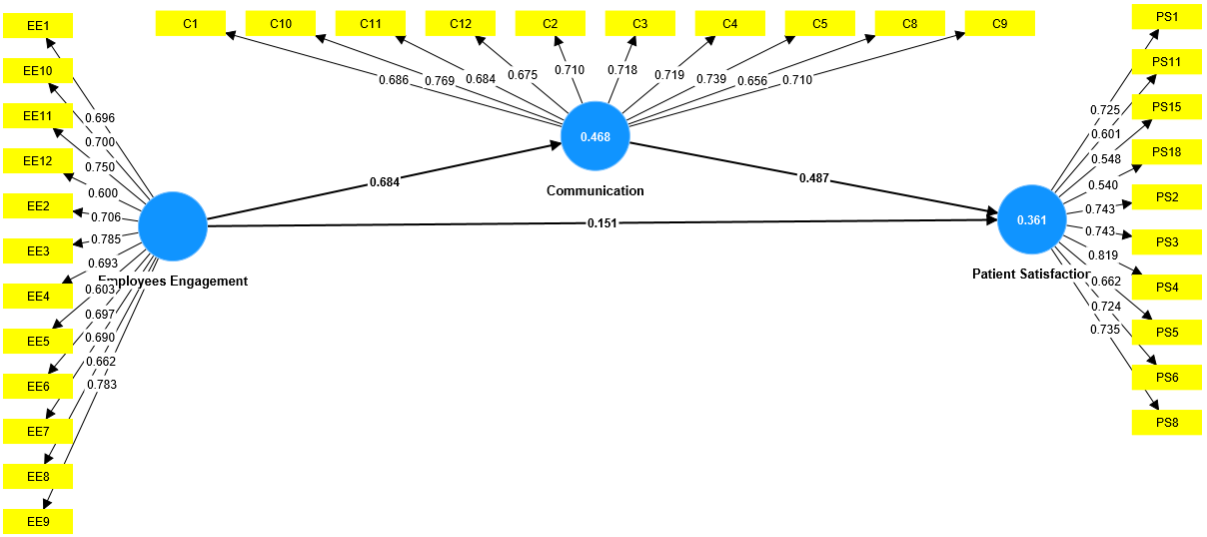

Figure 3: Path Coefficient

4.11. Mediation Analysis

This assessment examines the roles that a mediator envisions between independent and dependent variables. This credible approach enables an in-depth examination of how Communication (C) moderates the relationship between Patient Satisfaction (PS) and Employee Engagement (EE).

Table 10: Mediation Analysis

	Hypothesis	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Result
H4	Employee Engagement -> Communication -> Patient Satisfaction	0.333	0.346	0.063	5.331	0.000	Supported

The results of the mediation analysis showed a significant indirect effect of Employee Engagement on Patient Satisfaction through Communication, with a path coefficient of (P = 0.000 and t = 5.331). This finding highlights the crucial role that communication plays in converting Employee Engagement into improved Patient Satisfaction. According to the analysis, communication serves as an essential mediator, amplifying the impact of employee engagement on patient outcomes.

5. Discussion

The healthcare industry operates in an environment where customer demands are high, funding is limited, and innovations in medical equipment are a constant concern. Herzberg believes that an employee's psychological and emotional attachment to their work and the effort they exert to ensure that customers receive a high standard of care are closely related. The study results establish that patient satisfaction increases as employee engagement increases, supporting the appropriateness of emotional and psychological investments (Gish & Ooi, 2020) as the fundamental drivers for individual and organizational performance (Kang et al., 2020). Employee engagement, particularly in healthcare facilities, can enhance work satisfaction, staff retention, and morale, ultimately improving overall corporate performance and customer satisfaction (Bakker & Albrecht, 2018).

In addition, communication is the aspect that links this engagement to the reality of producing tangible outcomes. Employees should be able to communicate with one another to foster teamwork, while patients are treated with dignity, respected, and provided with care that aims to gain their satisfaction. This is crucial in a healthcare organization (Al-Abri & Al-Balushi, 2014). This result underscores the crucial role of effective communication in enabling the positive consequences of employee engagement to be evident in patient care (Barnlund, 1970b). Internally, transparent communication within a healthcare organization ensures better coordination, reduces errors, and facilitates effective task execution, all of which contribute to improved service delivery (Al-Abri & Al-Balushi, 2014). When communication is efficient, it mitigates misinterpretations and fosters a collaborative environment that benefits both employees and patients, underscoring the importance of clear, empathetic exchanges in delivering superior care (Barden & Giammarinaro, 2018).

The study confirmed the third hypothesis: Targeted interventions can enhance employee

engagement, communication, and patient satisfaction. Organizational interventions, including leadership development programs, emotional intelligence training, and the use of digital communication tools, have been shown to increase patient satisfaction and employee engagement in healthcare organizations (Shanafelt & Noseworthy, 2017).

The study's results also align with the broader literature on engagement and communication. Numerous academics have confirmed the significant influence of employee engagement on healthcare service quality (Kang et al., 2020) and the vital role of communication in translating this engagement into better patient care (Barden & Giammarinaro, 2018). The findings expand these perspectives by providing empirical evidence of how these components operate in combination to increase patient satisfaction, adding to the existing knowledge base on healthcare management and performance.

5.1. Conclusion and Recommendations

This research has focused on the interaction among various essential factors related to patient satisfaction, communication, and employees in healthcare organizations, with special reference to effective healthcare outcomes. Employee engagement is not only about job satisfaction or absorption, but is also crucial for delivering effective patient care. This study has supported the effectiveness of communication in providing healthcare services. Besides enhancing communication among its staff, effective communication is vital in interactions between patients and all professional caregivers involved in managing a patient's care. The potential to encourage greater employee involvement cannot be fully utilized if communication is poor or unclear. Organized communication across various leadership development programs ensures that employees at different levels are supported with materials and morale, resulting in the desired output.

5.2. Limitations & Future Directions

One of the study's most significant limitations is its cross-sectional design, which provides a snapshot view of the correlations between variables at a single point in time. Future studies should employ longitudinal designs to examine these temporal correlations further and provide stronger conclusions regarding causality.

Lastly, the sample for this study was limited to a particular group of healthcare organizations; the representativeness of the data may have been affected by selection bias, and the experiences of workers in these companies might not be typical of the workforce as a whole. A larger, more varied sample comprising multiple healthcare facilities of varying sizes, locations, and treatment settings should be the primary focus of future studies. Increasing the sample size can provide a more comprehensive perspective and enhance the external validity of the findings

6. Results

5.1. Descriptive result

The descriptive results in Table II provide an overview of variables (minimum, maximum, mean, and standard deviation). The average SFG value is negative (-0.02), indicating that, on average, firms in the sample faced difficulties in sustaining consistent financial sustainability throughout the period of study. CSR is at the average of 0.31, and its standard deviation is large, indicating a significant range in the firms' engagement in CSR activities. IC and its components HCE, have the highest average (4.01), which indicates its primary role in the IC, while RCE has the lowest (0.17), but still averages above zero. The overall IC averages 5.21, indicating an average performance in IC. FS and Fage are consistent, also, with an average size of 7.01 and an average age of 38 years. The LTDTA averages 0.45, which indicates a moderate dependency on long-term financing. Overall, the statistics illustrate heterogeneity across the firms regarding IC, CSR, and SFG.

Table II: Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
SFG	1251	-0.02	0.48	-0.69	7.01
CSR	1251	0.31	1.92	-0.31	2.71
HCE	1251	4.01	2.63	0.51	15.13
SCE	1251	0.71	0.24	-0.50	0.95
RCE	1251	0.17	0.18	0.09	0.84
CEE	1251	0.51	0.36	0.16	2.40
IC	1251	5.21	2.89	0.83	16.91
FS	1251	7.01	0.55	4.91	8.30
Fage	1251	38.12	15.20	10	88
LTDTA	1251	0.45	0.20	0.11	0.89

Source: Authors' own work

5.2. Correlation result

The Table III presents correlation matrix which demonstrates that no multicollinearity issues exist in dataset. To verify multicollinearity, we run a VIF test. Table IV shows the VIF result, all VIF values are low, below 2, while the mean VIF equals 1.21, which supports that no multicollinearity issue exists in the observed data.

Table III: Correlation Statistics

Variables	SFG	CSR	HCE	SCE	RCE	CEE	IC	FS	Fage	LTDTA
SFG	1									
CSR	0.24*	1								
HCE	0.31**	0.27**	1							
SCE	0.29**	0.23**	0.44**	1						
RCE	0.26**	0.19**	0.40**	0.43**	1					
CEE	0.24*	0.16*	0.37**	0.38**	0.41**	1				
IC	0.33**	0.13**	0.12	0.14	0.10	0.09	1			
FS	0.36**	0.29**	0.18	0.21*	0.17	0.19*	0.48**	1		
Fage	-0.28**	0.21**	0.15	0.16	0.13	0.10	0.41**	0.53**	1	
LTDTA	-0.20*	-0.19*	-0.10	0.08	-0.07	-0.06	-0.33**	0.29**	-0.31**	1

*p < 0.05, **p < 0.01

Source: Authors' own work

Table IV: Variance inflation factor

Variables	VIF	1/VIF
IC	1.51	0.66
FS	1.40	0.71
LTDTA	1.29	0.78
CSR	1.22	0.82
HCE	1.20	0.83
SCE	1.18	0.85
Fage	1.11	0.91
CEE	1.09	0.92
RCE	1.07	0.93
SFG	1.03	0.97
Mean VIF	1.21	

Source: Authors' own work

5.3. Regression results

The results of the Hausman tests for model selection between fixed effects or random effects are presented in Table V. Throughout all four models, the p-value is below 0.05, suggesting that the fixed effects models should be selected. Thus, we will analyze all specifications in the fixed effects model.

Table V: Hausman test

Variables	Model 1 (SFG)	Model 2 (SFG)	Model 3 (CSR)	Model 4 (SFG)
Chi2(6)	25.20	17.51	24.71	31.26
Prob>chi2	0.0001	0.002	0	0
Model	Fixed effect	Fixed effect	Fixed effect	Fixed effect

Source: Authors' own work

Table VI: Regression results

Variables	Model 1 (SFG)	Model 2 (SFG)	Model 3 (CSR)	Model 4 (SFG)
HCE	0.063***		0.661**	0.723***
	(0.293)		(0.613)	(0.149)
SCE	0.041**		0.214*	0.147**
	(0.273)		(0.510)	(0.327)
RCE	0.567***		0.432**	0.319***
	(0.835)		(0.340)	(0.246)
CEE	0.170**		0.117**	0.283**
	(0.821)		(0.492)	(0.217)
IC	0.896**		0.372***	0.0423**
	(0.329)		(0.055)	(0.195)
CSR		0.082***		0.0395**
		(0.259)		(0.425)
FS	0.163**	0.209***	1.237*	0.0931**
	(0.407)	(0.062)	(1.209)	(0.052)
Fage	0.031*	0.0421	10.327**	0.0029*
	(0.019)	(0.054)	(0.521)	(0.018)
LTDTA	-0.060	-0.229***	2.431	-0.0124*
	(0.031)	(0.195)	(5.062)	(0.075)
Constant	1.154**	2.483*	2.517	0.693
	(0.631)	(0.628)	(0.032)	(0.703)

Model	Fixed effect	Fixed effect	Fixed effect	Fixed effect
Obs.	1251	1251	1251	1251
R-squared	0.23	0.29	0.14	0.27
No. of coid	139	139	139	139

Source: Authors' own work

This study investigates the effect of IC and its components on SFG, CSR, and the mediating role of CSR between IC components and the SFG nexus. Although the study aids in the partial mediation, it does not affirm a complete transformation of IC into financial sustainability through CSR. The findings of the hypotheses in Table VI are as follows:

Model 1: All the elements of IC HCE, SCE, RCE, and CEE had significant and positive relationships with SFG. It is also worth noting that RCE was the most influential one, indicating that Pakistani firms capitalize on their intellectual resources, specifically relational capital, to create competitive advantages to attain financial sustainability in the long-term. This helps in supporting the RBV, which hypothesizes that a competitive advantage and sustainability outcomes are a result of valuable and unique resources such as IC, and thus affirms H1.

Model 2: CSR was found to have a significant positive effect on SFG, which supported H2. The results imply that the CSR practices can create a favorable image, reputation, and relationship between a firm and its stakeholders, which subsequently leads to financial sustainability in the long-term. Such findings are in line with the Stakeholder Theory that argues that when stakeholder interests are addressed via CSR, it would serve to legitimize the organization, hence lead to sustainability.

Model 3: The elements of IC had a significant impact on CSR, and HCE and RCE had the strongest effects. This means that the stronger a firm is in terms of IC, the more it is likely to take part in CSR activities, which substantiates H3. These findings correspond with the RBV, according to which companies make use of their resources that are distinct to achieve a competitive advantage, which involves taking part in CSR in order to enhance their brand image and social legitimacy.

Model 4: CSR mediates partially between IC and SFG; it satisfies all the conditions of the mediation model developed by Baron and Kenny (1986). The findings mean that although IC and CSR both have a significant impact on SFG, CSR partially mediates this relationship. This partial mediation implies that though CSR is a significant aspect of amplifying the effect of IC on SFG, it does not make the IC fully turn into financial sustainability. This observation conforms to the RBV as well as the Stakeholder Theory, which proposes that the strategic utilization of internal capacities by way of the CSR activities has a positive influence on sustainable growth.

5.4. Robustness

The findings of the GMM estimation in four models, as discussed in Table VII covers both the issues of endogeneity and robustness. Diagnostic tests, i.e., the Arellano-Bond AR(2) p-values, are systematically greater than 0.05, which is the result of no second-order autocorrelation, and this corresponds to the assumptions of the test. Moreover, the Hansen J-statistics show non-significant p-values (-0.25 to 0.35), which proves that no over-identification of instruments employed in the GMM estimations occurred in all the models. The results of these investigations confirm the validity of the GMM model in determining endogeneity and getting strong results.

The large positive coefficient of the lagged dependent variable across all models justifies the dynamic character of SFG, which means that the past financial performance affects the future sustainability practices positively. These elements of IC demonstrate a powerful and meaningful impact on SFG and CSR, which supports the significance of intangible resources to financial growth. The positive effect of CSR on SFG in Model 2 and the mediating effect of CSR in Model 4 demonstrate the strategic role of CSR between IC and financial sustainability.

Also, firm-specific controls, including FS and Fage, are always positive, whereas the LTDTA demonstrates mixed results in all models. In general, these results give strong empirical evidence on the importance of CSR and IC in facilitating SFG.

Table VII: Regression result

Variables	**Model 1 (SFG)**	**Model 2 (SFG)**	**Model 3 (CSR)**	**Model 4 (SFG)**
Lagged of Dependent	0.283***	0.382***	0.280***	0.274***
	-0.0151	-0.0163	-0.015	-0.0151
HCE	0.127***		0.559***	0.521***
	-0.021		-0.062	-0.06
SCE	0.056*		0.0210**	0.134**
	-0.0224		-0.0105	-0.058
RCE	0.821***		0.0427*	0.107***
	-0.0779		-0.0433	-0.021
CEE	0.0151*		0.0688*	0.0637***
	-0.0453		-0.022	-0.022
IC	0.184***		0.790***	0.777***
	-0.0491		-0.0771	-0.0777
CSR		0.103***		0.0129**
		-0.0381		-0.0443
FS	0.710***	0.127**	0.729***	0.699***
	-0.125	-0.0647	-0.125	-0.125
Fage	0.0904	0.014*	0.119**	0.119*
	-0.117	-0.0995	-0.115	-0.115
LTDTA	-0.0232	0.0592*	0.434	0.41**
	-0.31	-0.223	-0.305	-0.306
Constant	1.634***	0.299	1.482**	1.376**
	-0.595	-0.344	-0.59	-0.587
Industry Effect	Yes	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes	Yes
AR(2)-p value	-0.57	-3.52	-5.37	-4.55
	-0.07	0	-0.04	0
AR(2)-p value	0.32	0.101	0.56	0.43

	0.56	0.28	0.41	0.33
Hansen's J (p-value)	0.32	0.25	0.34	0.35
Observations	1251	1251	1251	1251
No. of companies	139	139	139	139

Source: Authors' own work

7. Conclusion

This paper examined the effect of IC on SFG, with the mediating role of CSR in Pakistani firms. This empirical study finds an answer to the question of the role played by intangible assets in making a company sustainable. The research is rigorous and generalizable within a local setting because of using a panel dataset (2016-2024) of 139 firms in Pakistan. The correlation analysis and the descriptive statistics indicate that there is a positive correlation between the variables. The Hausman test indicates that fixed-effects models are appropriate for the analysis, which was robust. The regression results indicate that, in total, all components of IC had significant impacts on CSR and SFG, and that CSR had a positive impact on SFG, suggesting that it partially mediates the relationship between IC and SFG. The regression results are analyzed with theoretical lenses such a RBV and Stakeholder Theory to suggest that firms that have developed capacities to utilize intangible assets and practice social responsibility achieve SFG.

There are several contributions made to the literature from the study. Firstly, this study enriches the existing literature on IC by showing how it affects SFG, rather than the usual emphasis on firm performance. Second, current research points out how CSR can improve the SFG of a firm, which demonstrates its possible use as a strategic instrument. Third, this study contributes to the body of literature on IC in the context of CSR, providing clues on how non-financial firms can combine them to achieve sustainability. Fourth, this empirical study evidence that CSR can enhance the relationship between IC and SFG, which contributes to a better understanding of the mediation process. Lastly, our research provides a contextual approach to IC and CSR in Pakistan, a developing economy, to the strategic role of such intangible assets in promoting financial sustainability.

The research has valuable policy implications for both the stakeholders of the business and policymakers. It has been suggested that companies strategically invest in IC, especially HCE and RCE, as these are the resources that not only favor short-term business performance but also facilitate CSR, which, in its turn, leads to long-term financial sustainability. Business executives ought to realise that CSR is an important mediator that can transform intangible capabilities into sustainable growth instead of the cost of CSR. To policymakers, particularly in the emerging markets such as Pakistan, these results indicate that the government can have a central role in encouraging businesses to invest in both IC and CSR. Policy makers may come up with specific incentives to stimulate companies to develop their intangible assets and be socially responsible by offering tax breaks or subsidies. The strategy would not only ensure the growth of the business but also ensure the social and economic growth spread. Socially, the study has shown the beneficial effects of socially responsible behavior on the stakeholders (investors, employees, and communities). Companies that practice CSR not only provide support to the social well-being but also to themselves and their sustainability. In terms of stakeholders, the paper highlights the

importance of ensuring that firms are transparent and accountable in their practices. In addition, the research can also contribute to the discussion of the Sustainable Development Goals (SDGs) in general and SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation, and Infrastructure) in particular by showing how knowledge and responsible business practices may help to achieve financial sustainability in the long term.

There are a number of limitations in this study. First, it concentrates on non-financial Pakistani firms, which precludes the generalization of its results to other sectors or areas. Second, panel data is strong, but the secondary data based on annual reports comes with the risk of bias because of the variation in reporting between firms. Thirdly, CSR is addressed as a unidimensional mediator, assessed as a ratio of CSR expenditures (donations, employee welfare, R&D) to net revenue, which might not be the best measure of qualitative characteristics of CSR (long-term strategic integration, perception of the stakeholders). The further studies ought to take into consideration the multi-dimensional CSR measures to make a more profound evaluation. Also, the study fails to examine moderating variables including innovation capacity, market competition or regulatory environments, which would further inform the relationship between IC and SFG. Future researches might use same models in emerging economies, use mixed methods to collect qualitative data, or investigate longitudinal characteristics of IC and CSR practices to improve their insight into the strategic usefulness of these practices in attaining long-term results.

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