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EMPIRICAL ARTICLE

Total quality management implementation practices and customer satisfaction: the role of innovative employee behavior and employee empowerment.

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Abstract

Purpose – This study investigates the impact of Total Quality Management (TQM) practices on customer satisfaction in healthcare systems, with a specific focus on the mediating role of innovative employee work behavior.

Design/Methodology/Approach – Employing a multistage sampling procedure, the study analyzed quantitative data from five Teaching Hospitals in Ghana. The relationship between TQM practices—including total management commitment, Training and Education, Performance Management System, and Supplier Management—and innovative employee work behavior was examined.

Findings – The findings reveal positive relationships between TQM practices and innovative employee work behavior and suggest that innovative employee behavior mediates the relationship between TQM practices and customer satisfaction in healthcare.

Contributions– Theoretically, this study contributes to the body of knowledge on TQM and healthcare systems by elucidating the role of employee innovation in enhancing customer satisfaction. Practically, it offers insights for hospital professionals to prioritize TQM dimensions effectively to adapt and improve customer satisfaction outcomes.

KEYWORDS

TQM, Satisfaction, innovative employee work behavior, Teaching hospitals, Health.

1 | INTRODUCTION

The exponential growth, complexities, and competition among organizations have spurred intense research in the field of strategic management. Over the past few decades, studies have focused on Inspection Quality Control (IQC), Statistical Process Control (SPC), Total Quality Control (TQC), and Company-wide Quality Control (CWQC) (Nguyen and Nagase 2019). In the 1980s, these endeavors were gradually incorporated under Total Quality Management (Juran et al. 1998, Aized 2012). Total Quality Management (hereafter TQM) is a management approach that assists organizations in building competitive strategies. This is a continuing activity aimed at providing a quality of service that meets or exceeds client expectations (ISO 2015a). The TQM philosophy emphasizes integrated management, and customer-oriented practices including reducing rework, long-term thinking, increased employee involvement, teamwork, process redesign, team-based problem solving, constant results assessment, self-inspection, cost-of-quality monitoring, and ever-closer relationships with suppliers to ensure the quality of service or product (Salter 1993). To improve the profitability/ patronage of an organization's services, the company must offer superior value to meet or exceed customer needs (Al-Shdaifat 2015). Thus, quality management is an important strategy for a company's development (Kotler and Keller 2000). According to ISO 9001, a company's quality management goes beyond product quality, it also involves interactions with customers (ISO 2015b). Total quality management systems increase service quality, which raises patient satisfaction (PS). Patient satisfaction is a crucial instrument for evaluating the level of service provided by a healthcare institution as it reflects the patient's perspective of service quality as a customer (Nguyen and Nagase 2019). Service quality and a satisfied patient's perception of high quality are antecedents of

loyalty (Rostami et al. 2019). If quality improvement and organizational success are positively correlated (Abdullah et al. 2012), the significance of TQM practices in enhancing operational efficiency and customer satisfaction was highlighted by Chang et al. (2010). As stated by Yusuf et al. (2007), TQM has been used since its inception as a strategy for maximizing client satisfaction, improving product quality, and increasing productivity, however, the improved healthcare system and adoption of TQM practices faced several hurdles that affected its effectiveness (Albejaidi 2010). The inadequacy of Saudi medical experts, skilled health workforce, and staff turnover are some of the most significant obstacles to TQM adoption (Albejaidi 2010). This implies a linkage between employee empowerment and TQM. This philosophy is well enshrined in Luthans et al. (1995) (cited in Yue et al. (2011)), who defined it as a "participative system whereby all employees are empowered to take responsibility and contribute towards quality management in the organization". Empowerment is a human resource management (HRM) strategy that includes the transfer of authority and control from the upper-level to lower-level personnel in an organization (Geralis and Terziovski 2003). Moreover, Pramuka and Adawiyah (2012) posit the integration approach of HRM with TQM implementation is key for the successful implementation of the TQM program. Both quality and innovation are crucial to a sustainable organization and a competitive advantage in this rapid technological change era. Al-Swidi (2016) highlighted innovation as a key component to achieving successful TQM implementation. In both the technology and human dimensions, TQM practices help to develop cultures and environments that support innovation (Soreshjany and Dehkordi 2014). Kaynak (2003) perceived innovative behavior and TQM to serve the same purpose, thus, both seek to integrate organization objectives and functions to satisfy the customers and increase competitive advantage. The relationship between innovative behaviors and TQM determines organization performance and development (Kim and Park 2017). Prior studies found that TQM positively affects innovative behaviors (Abrunhosa and Moura E. Sá 2008, López-Mielgo et al. 2009, Martínez-Costa and Martínez-Lorente 2008). For instance, Kakkar et al. (2020) documented that TQM had a significant positive influence on the innovative behaviors of employees such as building customer relationships, increasing performance, and devising novel ideas that enhance the organizations' development. It is widely accepted that TQM implementation is essential to ensure organizational efficiency (Al-Ali 2014). The focus of TQM is continuous improvement within the organization to ensure high-quality processes and products, which expands the company's competitive advantage in the global market (Kotler and Keller 2000). Furthermore, with the world's rapidly evolving and increasing complexities, there has been widespread adoption of TQM practices in enterprises, hospitals, organizations, and companies over the last few decades. The healthcare system has grown increasingly challenging to manage due to rising competitiveness and dynamism in medical science, as well as higher customer expectations. Despite significant investments in healthcare, quality healthcare delivery is often perceived across the world as substandard, ineffective, and inefficient. The situation is direr in Sub-Saharan Africa (Dominic et al. 2019, Ogaji et al. 2015, Faruk et al. 2020). To preserve and maintain great healthcare, there is a clarion need for reform in the way it is administered but most studies focused on the relationship between TQM and satisfaction/performance, with little to no emphasis on the role of innovative work behaviors and employee empowerment (Jahanshahi et al. 2011). Based on quantitative data from teaching hospitals in Ghana, this study contributes to the existing literature by examining the relationship between TQM and customer satisfaction incorporating the mediating and moderating effects of innovative work behaviors and employee empowerment.

2 | THEORY BACKGROUND AND HYPOTHESES

2.1 | Top Management Commitment Practices and Customer Satisfaction

The primary function of management is to provide leadership to subordinates to achieve the organization's long-term goals. As a result, many researchers have different perspectives on leadership. Leadership establishes a vision and environment that encourages people to contribute to organizational goals and nurtures both their ability to do so and their well-being. If management and staff cooperation and commitment are critical for the execution of TQM and organizational performance, employees are motivated to do a good job if they have the right tools and systems to do so (Afsar and Masood 2018). Afsar and Masood (2018) went on to say that management may include hiring the right people, assigning the right job functions to the right people, offering management coaching, and providing the right finance to carry out the right functions within the organization, providing the right incentives for employees, and creating the right environment to implement quality management systems.

Management should understand how to encourage employees to be innovative for the sake of the company and how to instill a sense of R&D in them. Employee learning and performance can also be improved by changing the leadership style, indeedmanagers' interactions with employees influence them in a way that supports and facilitates employees, resulting in positive workplace behaviors and attitudes (Pastoriza et al. 2008).

A leader-member exchange (LMX) model describes employees' perceptions of manager behavior and its quality. High-quality LMX is mutual trust and respect among employees and managers, while low-quality LMX is the opposite, resulting in poor performance and negative perceptions of the workplace among employees. Leaders can use digital tools to develop interpersonal, competence, and systems trust with their employees and customers (Lissillour and Sahut 2023). To achieve high-quality performance and continuous improvement, management must perform their role, go beyond the usual purposes of supervision, and not only control but also facilitate their employees'

learning (Lissillour and Rodríguez-Escobar 2020). Effective top management commitments include knowledge-sharing behavior (Guechtouli and Purvis 2024), feedback, recognition, advising, empowering, and caring responses, which results in employee motivation to achieve their goals.

For a workplace that requires more innovative capabilities, management commitment has become critical (Wang et al. 2015). According to (Zlatanović and Mulej 2015), socialization activities are important for enhancing employees' tacit knowledge, and socialization between subordinates and managers can help the coaching relationship. Employees require work-related and complex tacit knowledge held by managers, which can be shared through informal interactions between managers and subordinates, especially when employees are required to execute innovative ideas or convert creative ideas into a specific and viable product (Rodriguez-Escobar and Lissillour 2022). Furthermore, an empirical study reveals that a manager's orientation to encourage knowledge-sharing behaviors among employees has an impact on employees' innovative behaviors (Lissillour and Ruel 2023). As a result, management should encourage innovative behavior and make it easier for employees to learn at work because of daily interactions between subordinates and managers. In contrast to employees who perceive low Management commitment, employees who find their manager helpful and supportive become more committed to the pursuit of innovation (Wang et al. 2015), hence:

Hypothesis 1: There is a positive relationship between total management commitment practices and customer satisfaction.

2.2 | Training and education practices and Customer Satisfaction

Psychogios and Priporas (2007) belong to the school of thought that believes that training is the single most important component of Total Quality Management. They stress the importance of quality training to keep up with the ever-changing business environment in which a company operates. Technology, business structures, and, most importantly, workers may all change. According to Franco and Haase (2016), to improve their quality, institutions must conduct a needs assessment analysis. These researchers emphasized that a company's continuous improvement cannot occur unless training is a priority for management. Leadership should take the initiative to assess each employee's ability to carry out his or her responsibilities.

TQM companies should provide all their employees with the necessary training to help them perform better in their jobs. Firms achieve success through effective management training and quality improvement. Employees' effective knowledge and learning capability will ensure the firm's quality management sustainability. Further to that, learning organizations adapt quickly to changes and develop distinct behavior that sets them apart from other businesses and allows them to achieve better results. Quality is not the responsibility of a single section or department; it is also the responsibility of the entire organization. Based on the findings of the training needs assessment, all employees should receive training (Criado and Calvo-Mora 2009). Employees who have received effective training are familiar with the industry and the firm's structure. Besides that, effective training will increase employee loyalty, motivation, and modify behavior, as well as innovative work performance. Employees' full participation at the beginning of the project would be more fruitful if they were trained in producing dependable and high-quality products and/or services.

As an important aspect of a health organization, human resources organize training programs to assist employees in improving their skills, capabilities, and competencies while working with limited resource management (Bos-Nehles and Veenendaal 2019). To determine the relationship between training and innovative behavior, Singh (2019) conducted a cross-sectional study with 199 respondents from India's SME sector. According to the study's findings, human resource practices, particularly training, are positively associated with employees' innovative behavior in the SME sector, where capital for development policies is relatively limited.Azevedo and Shane (2019) conducted an empirical study in Canada, collecting data from employees of an energy company. Employees' innovative behavior is significantly improved by training programs. The impact of training programs on employees' innovative behaviors was investigated by Bos-Nehles and Veenendaal (2019) and they found that training perceptions are strongly linked to employees' innovative behavior, thus:

Hypothesis 2: There is a positive relationship between Training and Education practices and customer satisfaction.

2.3 | Performance Management System (PMS) practices and Customer Satisfaction

Through the feedback it provides, PMS can explain and predict knowledge-sharing, fostering individual EIWB, indeed organizations that encourage knowledge-sharing both within and outside their boundaries are more likely to develop innovation and, as a result, achieve better performance (Radaelli et al. 2014). Social interactions are governed by reciprocity norms so when employees receive feedback via a PMS, they will feel obligated to return "the favour," adopting positive attitudes and behaviors toward the organization, such as providing new information and ideas that promote innovation (Radaelli et al. 2014). Furthermore, Chen and Huang (2009) argued that the stress that employees feel when they know they will be the subject of a PMS can be beneficial. This pressure motivates them to take on new challenges and tasks to guide and promote EIWB. They agreed that PMS, in conjunction with other practices, contributes to the organization's increased innovation results.

In the organization–employee relationship, Ismail and Rishani (2018) identified unexpected reciprocity. As a result, if an employee believes that the PMS can provide them with useful feedback, they will feel obligated to give something directly to the organization, such as new ideas or innovative behavior patterns. Furthermore, if the aspects evaluated include knowledge activities (knowledge-sharing, creation, and

utilization), the impact of PMS on knowledge-sharing and, as a result, on employee adoption of EIWBs increases (Inkinen et al. 2015). EIWB can be improved by receiving feedback at this level. According to Jiménez-Jiménez and Sanz-Valle (2005), there is indeed a real correlation between an organization's adoption of an innovation strategy and the application of PMS practices, both of which are focused on development and results.

Employee perceptions of the PMS will influence their commitment level to the achievement of organizational goals, and, as a result, their information-sharing and innovation behaviors. Employees will be motivated and encouraged to adopt positive behaviors, such as developing and implementing innovative ideas in their organization if they are satisfied with the PMS because they will feel obligated to repay the firm by exhibiting improved behavior, such as creative contributions (Ismail and Rishani 2018).

Organizational rewards are widely regarded as one of the strong motivational HR practices for increasing an organization's employees' innovative work behavior. "Reward and wage systems" that are properly developed and implemented in organizations have a positive impact on entrepreneurial and creative behavior as well as organizational commitment (Lissillour 2018). It is stated that if the recipient of the award is made aware of the extent of their creativity, their creativity will skyrocket (Eisenberger and Rhoades 2001).

Regarding reward-innovative work behavior, Janssen (2000) emphasized the importance of employees' effort-reward fairness perception. According to the study, perceptions of effort-reward fairness and innovative work behavior have a positive relationship. Furthermore, employees' sense of fairness in wage distribution increases their motivation to demonstrate commitment to the organization and creative work behavior. Organizational commitment and innovative work behavior can be boosted by a fair and balanced salary distribution. Promotions and incentives encourage employees to engage in more innovative work practices, hence:

Hypothesis 3: There is a positive relationship between Performance Management System practices and customer satisfaction.

2.4 | Supplier Management (SM) practices and Customer Satisfaction

The cooperation between businesses and manufacturers is enhanced by supplier management. To accomplish this, it is necessary to permit supplier participation and involvement in the design and manufacturing processes. The acquisition of raw materials that satisfy the needs of the organization is aided by supplier relationship management (Kaynak 2003). Managing supplier relationships is used to facilitate tasks like working with suppliers to make sure that customers' expectations are met, managing supplier relationships, involving suppliers in the product development process, establishing strategic partnerships with suppliers, and improving process management, which collectively contributes significantly to customer/employee satisfaction and profitability (Javed et al. 2019).

Supply management entails lowering and improving the efficiency of supplier relationships to manage the supplier base, developing strategic alliances with suppliers (Javed et al. 2019), "collaborating with suppliers so that expectations are met" and engaging suppliers early in the product development process to capitalizing on their capabilities and expertise (Zaid et al. 2020). Inputs from suppliers make up the first stage of a company's product and/or service production. High-quality input yields high-quality outputs in the form of goods and/or services. To actively participate in this process, suppliers should adopt TQM practices. Suppliers can implement quality management and deliver dependable, high-quality goods and/or services on schedule by using effective supply management techniques.

In terms of operational performance, inventory management performance, innovation performance, and overall firm performance, supplier management is advantageous (Chienwattanasook and Jermsittiparsen 2019, Hassan and Jaaron 2021, Dawabsheh et al. 2019, Zehir and Sadikoglu 2012), thus:

Hypothesis 4: There is a positive relationship between Supplier Management practices and customer satisfaction.

2.5 | The mediating role of EIWB on TQM and customer satisfaction.

Using survey methods and statistical analysis such as correlation and multiple regression analysis, Topalović (2015) examined the implementation of total quality management to enhance the performance of production and the level of customer satisfaction. It was found that top management commitment, courtesy, and responsibility towards the customer are significant drivers of customer satisfaction. Talha (2004) explained that TQM practices "are set of activities of management and processes designed to focus an entire organization and all of its employees on providing products and services that do the best possible job of satisfying customers". Customer Satisfaction, as argued earlier, is influencing a repurchase or the intention to repurchase a product or a service by a customer. TQM practices seek continuous improvement in the quality of the organization's processes, services, products, and people. Therefore, organizations that practice TQM establish and accomplish high customer satisfaction.

According to Zaid et al. (2020), in practicing TQM, top management's strong commitment is crucial. This leads to customer satisfaction and higher-quality performance. More so, continuous training and education had a positive impact on the organizational culture and performance and achieving customer satisfaction. This makes Al-Fawaeer et al. (2012) conclude that there is a positive significant influence of practices of TQM on customer satisfaction.

When knowledge workers seek to explore opportunities with openness and creativity, they exhibit innovative employee work behavior (EIWB) (Zaid et al. 2020). Kim and Park (2017) found that when knowledge workers are given resources and time to begin generating and implementing beneficial innovation alternatives, they demonstrate EIWB.

Strong competitive drivers are causing significant changes in the healthcare delivery industry, prompting existing organizations to investigate how to increase EIWB to accelerate innovative approaches to meet market demands, build customer relationships, and increase performance, market share, and profitability while lowering the cost of doing business (Gerstein and Friedman 2017). Organizational leaders must foster an innovative (constant research and development) culture that responds to fluctuating market demand for the organization to survive (A. Agarwal 2014). Thus, the above studies suggest that TQM practices positively affect customer satisfaction and also EIWB affects customer satisfaction, hence:

Hypothesis 5a-d: The positive relationship between all the dimensions of TQM practices with customer satisfaction will be partially mediated by EIWB.

2.6 | The Moderating Role of Employee Empowerment.

The notion of employee employment states that an employee has the "capacity to mobilize resources to get things done" when working for a company (Kanter 1993). For an organization to achieve customer satisfaction, the organization's human resource department should prioritize smart hiring and employee empowerment (Siegall and Gardner 2000). Human resource management contributes significantly to customer satisfaction through recruiting and developing top-tier personnel, as well as training and empowering this talent. Daoud Abu-Doleh (2012) asserts that human resource policies such as employee empowerment when combined with other TQM techniques, have a major impact on an organization's desire to achieve customer satisfaction. In addition, Daoud Abu-Doleh (2012) asserted that employee empowerment has an impact on the application of TQM procedures in organizations. Employee empowerment is beneficial to the organization because it allows for the efficient application of TQM procedures, which in turn improves the overall quality performance of the organization. In his view, empowered employees would "create an environment in which employees can make educated judgments." Thamizhmanii and Hasan (2010) went on to argue that empowered employees will improve the effective application of TQM methods by eliminating role ambiguity, boosting job satisfaction, encouraging job involvement, and decreasing employee turnover intentions (Thamizhmanii and Hasan 2010) . These characteristics will, over time, have a favorable impact on the overall performance of the company and, as a result, will improve the business's ability to achieve customer satisfaction through the application of TQM practices.

To be effective, Total Quality Management necessitates the full participation of all stakeholders in the organization, particularly employees. Adza-Awude (2012) argued that everyone in the company should be structured to allow for improvement in how they execute their jobs and meet customer requirements and needs. Employee involvement can thus be defined as the degree to which employees are given the freedom to participate in the production process decision-making, thus:

Hypothesis 6: The positive relationship between Total quality management (TQM) and customer satisfaction is moderated by employee empowerment.

Employees who are completely dedicated to their jobs are engaged. Physical, cognitive, and emotional commitment are examples of employee engagement. Empowerment is also another important precursor to engagement, according to Stander and Rothmann (2010), even though empowered employees are much more engaged and committed to their jobs and roles. According to Stander and Rothmann (2010), more research is needed to better understand how LMX impacts empowerment and job commitment, both of which can promote EIWB. Leaders can achieve workplace engagement/job commitment through higher-level, trust-based LMX relationships., thus:

Hypothesis 7: The positive relationship between innovative employee work behavior and customer satisfaction is moderated by employee empowerment.

The conceptual framework for the study was underpinned by the theories used in the study (Structural Empowerment theory and Leader-Member Exchange theory) to describe the direct effects of TQM on customer satisfaction, and the mediating effect of IEWB on the direct path. Employee empowerment was modeled as the moderator in this study (see figure 1).

The framework has two (2) groups of control variables. The first group of control variables related to the mediator (Innovative Employee Work Behavior) were gender, sex, and education. On the other hand, the second group of control variable were related to the outcome variable (Customer Satisfaction). These were the size of an organization, customer service, type of organization, and brand of the organization.

3 | RESEARCH METHODOLOGY

The research approach was quantitative, and the research design used in the study was a cross-sectional study design. The study used the five (5) teaching hospitals in Ghana; Korle Bu Teaching Hospital (KBTH), Komfo Anokye Teaching Hospital (KATH), Cape Coast Teaching Hospital (CCTH), Ho Teaching Hospital (HTH), and Tamale Teaching Hospital (TTH). The target population used for the study was the staff of the teaching hospitals who are in management positions (Supervisors, Managers, Senior Managers, and Directors). In all, the study used 400 participants: 177 Supervisors, 95 Managers, 70 Senior Managers and 58 Directors. The study participants were selected using a multi-staged sample procedure. That is, the study employed the stratified random sampling procedure, proportionate sampling procedure, and simple random sampling procedure. Self-administered structured questionnaires were used to collect data from the study participants. The questionnaire was designed to cater to common method variance using the recommendations made by Podsakoff and Organ (1986), such as the use of multiple scale formats and reverse-coded items. The questionnaire was constructed with items from the literature, see table 1.

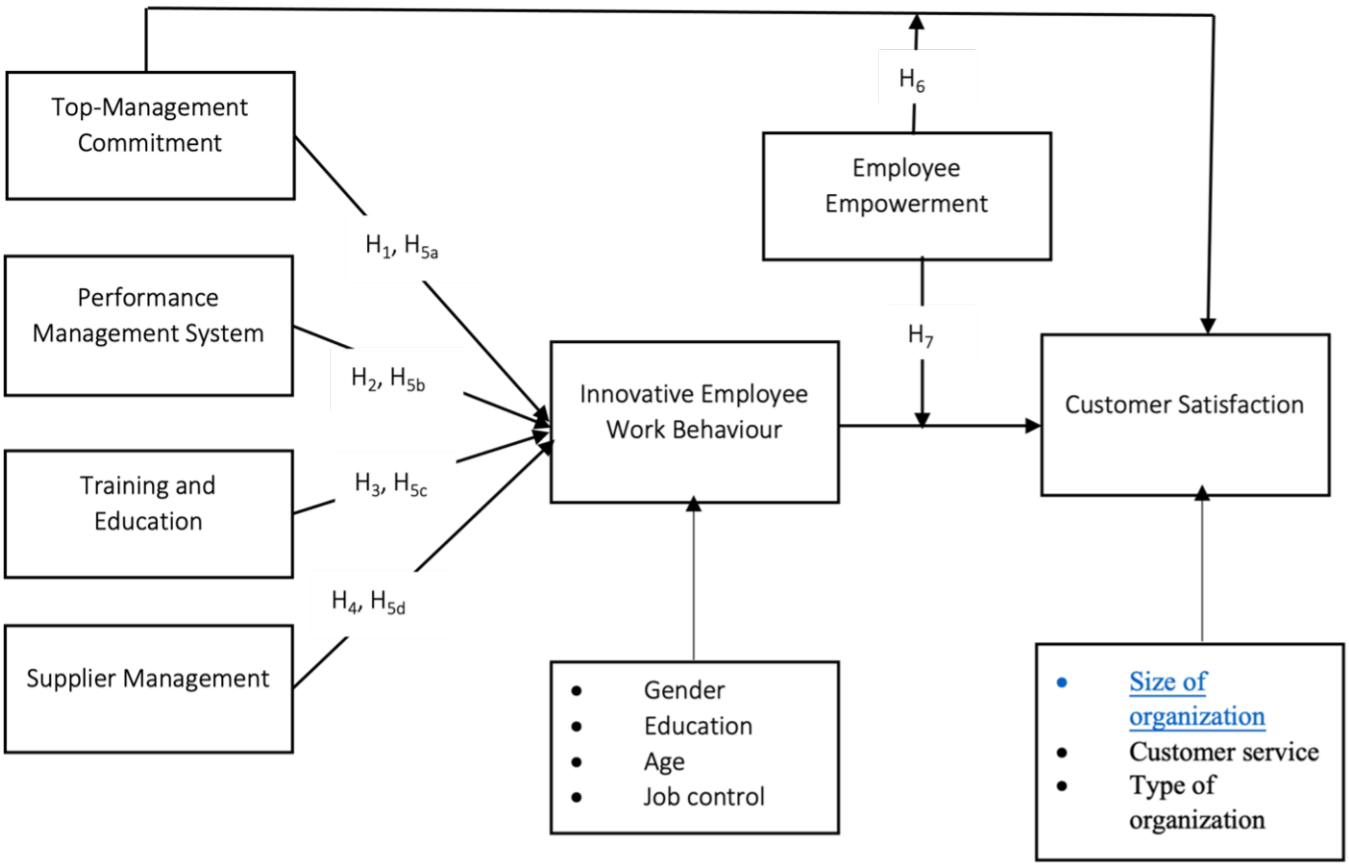

FIGURE 1 Conceptual framework.

TABLE 1 Operational Variables and Sources

Operational Variable	Number of Items	Source
Top Management Commitment	5 items	Adapted from Were (2003); Kerry and Nathaniel (2006).
Performance Management System	7 items	Adapted from Tziner & Kopelman, (2002); Pulakos & O'Leary, (2011).
Training and Education	6 items	Adapted from Cervená (2011); Stavrou et al. (2004).
Process Control & Continuous Improvement	4 items	Adapted from Balbastre and Moreno Luzón (2003); Schalk and Dijk (2005).
Supplier Management	8 items	Adapted from Hoegl & Wagner, (2005); Flynn et al., 1995, Goo et al. (2006)
Innovative Employee Work Behaviour	10 items	Adapted from Janssen, (2000); Scott & Bruce (1994)
Employee Empowerment	18 items	Adapted from Pilerot & Limberg (2010); Bock et al. (2007).
Customer Satisfaction	6 items	Adapted from Khadka & Maharjan (2017); Oliver (1997).

Data collected was entered, managed, and analyzed using SPSS v26 and AMOS v24. Data were inspected for both completeness and consistency. The data collected were subjected to Kolmogorov–Smirnov Test, Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy test, and Bartlett Test of Sphericity. Then, reliability and validity tests were run using the guidelines recommended by Hair Jr et al. (2014). To ensure that ethical principles were upheld, the researcher obtained an introductory letter from the Institution. Again, approvals were sought from the various Institutional Review Boards (IRB) of the various Teaching Hospitals. Written informed consent was sought from the study participants after a full explanation of the study and their role in the study had been given. Also, participants were not coerced to participate and were made to understand that can withdraw from the study at any point in time and for whatever reason without prejudice. Confidentiality of any information provided by the participants was upheld and their privacy and anonymity were ensured in the collection, storage, and publication of the data.

3.1 | Demographic characteristics

Table 2 shows the demographic characteristics of the respondents used for the study regarding their sex, age, highest educational level, job title/role, job description, years worked, size of the organization, brand of the organization, perceived performance of the organization, organization's customer service and the name of the organization.

3.2 | Test of Normality

The Shapiro-Wil test suggested that the data set for all of the constructs used in the study were normally distributed, as evident from Figure 2 below.

3.3 | Descriptive statistics

A clear description of the data shows that each item was intact and free from errors. Wrong entries were corrected, and missing value anomalies were also resolved. Subsequently, the individual constructs were used to assess the normality of the data. A test of normality was conducted on the data spread for all the measures in the questionnaire. The tests for skewness and kurtosis are shown in Table 2. The data were normally distributed since the skewness and kurtosis were approximately between -1 and +1 (Table 2).

4 | RESULTS

4.1 | Regression Analysis (Mediating)

The study conducted a regression analysis which looked at the pathway of the hypothesis. From the results, the researcher examined the direct effect of the control variables (Gender, Age, Education, and Position) of the mediator (ie IEWB) and the outcome variable (Customer satisfaction). From table 3, none of the control variables had a direct effect on customer satisfaction. That is, Gender (β = 0.094; t-value = 1.495, p > 0.05), Age (β = -0.042; t-value = -1.143, p > 0.05), Education (β = 0.045; t-value = 1.356, p > 0.05), and Position (β = 0.020; t-value = 0.013, p > 0.05) did not have a direct effect on customer satisfaction. Table 3 indicates that Top Management Commitment (β = 0.454; t-value = 10.144, p <0.000), showed a direct effect on customer satisfaction. Further, with innovative behavior as a mediator, Top Management Commitment (β = 0.323; t-value = 8.372, p <0.000). Also, innovative employee behavior (β = 0.247; t-value = 4.603, p <0.000), affected customer satisfaction. Top Management Commitment, mediated by innovative employee behavior, which affected customer satisfaction, showed an R2 =34.8% which explains the variance in customer satisfaction. Also, Training and Education (β = 0.292; t-value = 6.222, p <0.000), showed a direct effect on customer satisfaction. Further, with innovative behavior as a mediator, Training, and Education (β = 0.289; t-value = 7.405, p <0.000). Also, innovative employee behavior (β = 0.335; t-value = 5.929, p <0.000), affected customer satisfaction. Top Management Commitment, mediated by innovative employee behavior, which affected customer satisfaction, showed an R2 =34.8% which explains the variance in customer satisfaction. Supplier Management (β = 0.217; t-value = 4.553, p <0.000), showed a direct effect on customer satisfaction. Further, with innovative behavior as a mediator, Supplier Management (β = 0.301; t-value = 7.917, p <0.000). Also, innovative employee behavior (β = 0.360; t-value = 6.179, p <0.000), affected customer satisfaction. Top Management Commitment, mediated by innovative employee behavior, which affected customer satisfaction, showed an R2 =0.369 which explains the variance in customer satisfaction. Lastly, the Performance Management System (β = 0.306; t-value = 6.555, p <0.000), showed a direct effect on customer satisfaction. Further, with innovative behavior as a mediator, Supplier Management (β = 0.285; t-value = 7.280, p <0.000). Also, innovative employee behavior (β = 0.331; t-value = 5.903, p <0.000), affected customer satisfaction. Supplier management, mediated by innovative employee behavior, which affected customer satisfaction, showed an R2=34.3% which explains the variance in customer satisfaction.

4.2 | Moderation Analysis

The moderation analysis was performed to analyze the moderation effect of employee empowerment on the relationship between IEWB and Customer Satisfaction. The data was analyzed using the enter method procedure. The results of the regression analysis in Table 4 present the R2 to show the proportion of variance accounted for by the variables. The F-value presents a number from zero and above to indicate the ratio of the mean of regression of squares when divided by the mean of the error sum squares. The ΔF-Value indicates the test of ΔR2 with an F-test where a significant change in the F-value signifies how the addition of variables in the regression model improved the model prediction. While the degree of freedom (df) shows the estimate of independent values used in the estimation, the Durbin-Watson was used to test the key assumption of independence of the residuals. Even though the value of Durbin-Watson should not be less than 1 or greater than 3, the rule of thumb indicates that values between 1.5 and 2.5 are relatively considered normal. Table 4 presents the regression analysis of the direct effect of innovative employee work behavior on customer satisfaction and how this effect is moderated by employee empowerment. Employee empowerment is measured by three constructs; Line of information, Availability of support and resources, and opportunity to learn and grow. The regression analysis was conducted in four models. From the table below, the interaction effects between the mediator (IEWB) and the constructs of employee empowerment were not significant. The plausible explanation for this finding is that the proxy-dependent variable (IEWB) and the TQM constructs may have aspects that cut across the employee empowerment constructs.

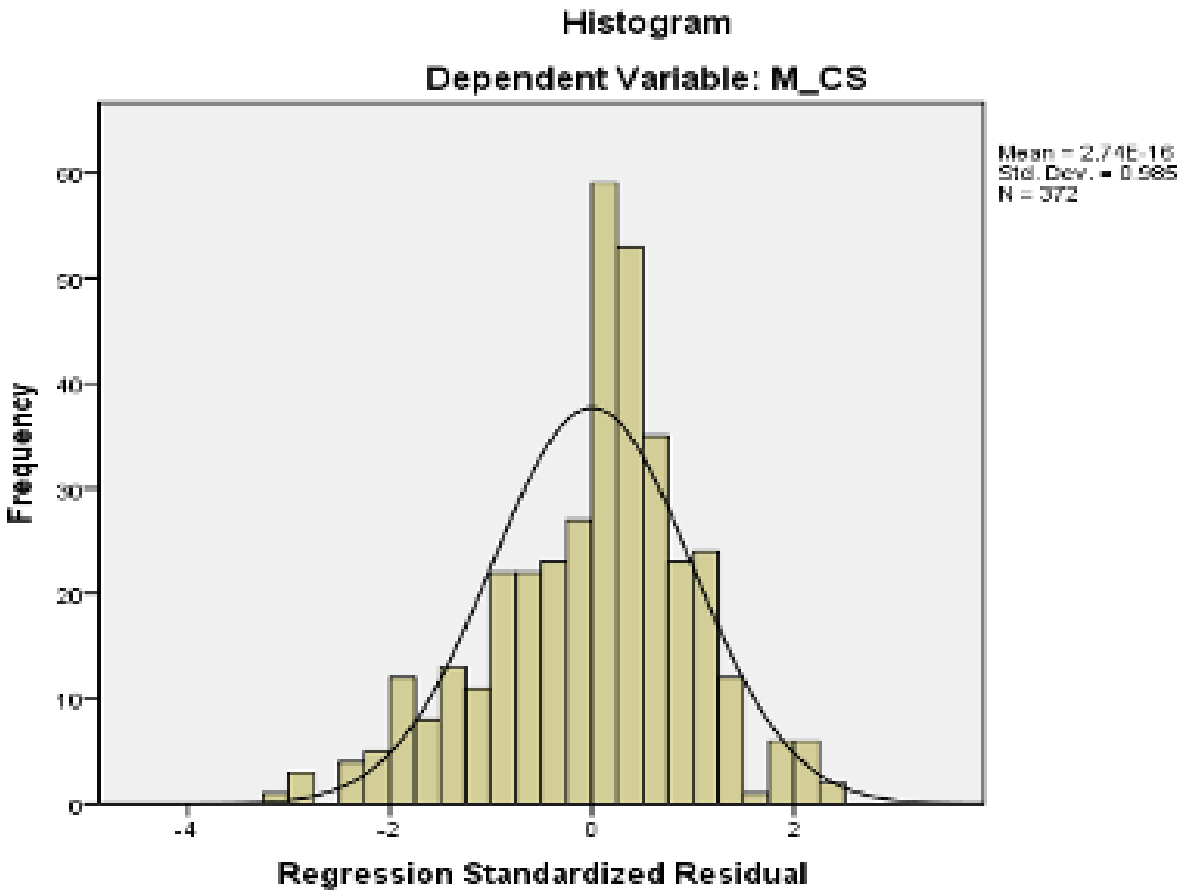

FIGURE 2 Normality test.

TABLE 2 Descriptive Statistics of the Scales

Scales	No. of items	M (SD)	Skewness	Kurtosis
Total quality management practice				
Top management commitment	5	3.36(.76)	-.116	-.82
Training and education	5	3.5 (.73)	-.026	-.634
Supplier management	8	3.3 (.72)	.074	-.704
Performance management system	7	3.6 (.76)	-.254	-.557
Innovative Employee Work Behaviour	10	3.7 (.66)	-.421	-.106
Employee empowerment	18	3.5 (.71)	-.215	-.691
Customer satisfaction	6	3.5 (.73)	-.179	-.534

5 | DISCUSSION

The study focused on assessing the impact of TQM practices on customer satisfaction. Also, the study focused on understanding the relationship between TQM practices and customer satisfaction through the mediating route of innovative work behaviors as well as the moderating role of employee empowerment. All the hypothesis were validated, except one (see table 5). Below is a discussion of the relationship between the identified TQM practices and innovative work behavior.

5.1 | A positive relationship between total management commitment practices and innovative employee work behavior

Firstly, the data analysis supported the assertion that top-quality management (i.e. a component of TQM) positively influences innovative work behaviors. Top management through its leadership and commitment style facilitates innovative behaviors in the organization by enlightening the various managers of the different directorates to pay full

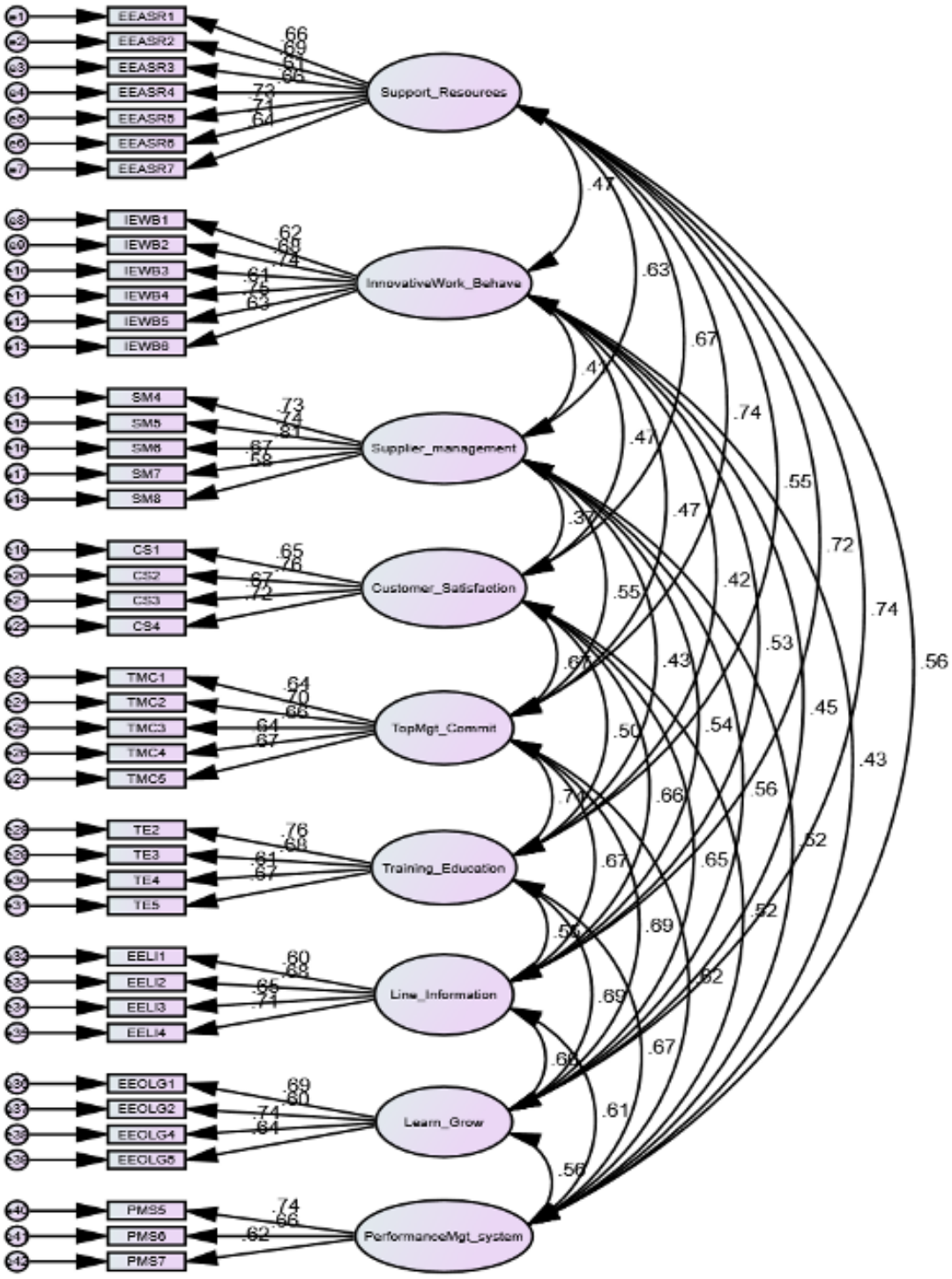

FIGURE 3 Confirmatory Factor Analysis.

attention to employees and carve in the hearts of employees what is expected from them. Also, top management qualities such as an efficient loop system between management and employees serve as capital for building work-relevant knowledge, and skills, and generating novel ideas (Steffens et al. 2021). Moreover, acknowledging employees' distinct contribution to an organization (which is also a top management quality)

TABLE 3 A hypothesized path

Hypothesized path	Direct effect (β)	t-values	Indirect effect (β)	R^2	95% CL Lower	95% CL Upper	Hypothesis testing
Gender → IEWB	.094	1.495					NA
Age → IEWB	-.042	-1.143					NA
Education → IEWB	.045	1.356					NA
Position → IEWB	.020	.013					NA
Top Mgt Commitment → Customer Satisfaction	.454	10.144***		.387			Accepted
Top Mgt Commitment → Innovative Employee Work Behavior	.323	8.372***					NA
Innovative Employee Work Behavior → Customer Satisfaction	.247	4.603***					NA
Top Mgt Commitment → IEWB → Customer Satisfaction			.080		.037	.129	Partial Mediation
Training	Education → Customer Satisfaction	.292	6.222***		.348		Accepted
Training	Education → Innovative Employee Work Behavior	.289	7.405***				NA
Innovative Employee Work Behavior → Customer Satisfaction	.335	5.929***					NA
Training	Education → IEWB → Customer Satisfaction			.097		.052	.154
Partial Mediation							
Supplier Mgt. → Customer Satisfaction	.217	4.553***		.369			Accepted
Supplier Mgt. → Innovative Work Behavior	.301	7.917***					NA
Innovative Work Behavior → Customer Satisfaction	.360	6.179***					NA
Supplier Mgt. → IEWB → Customer Satisfaction			.108		.065	.163	Partial Mediation
Performance Mgt. System → Customer Satisfaction	.306	6.555***		.343			Accepted
Performance Mgt. System → Innovative Work Behavior	.285	7.280***					NA
Innovative Work Behavior → Customer Satisfaction	.331	5.903***					NA
Performance Mgt. System → IEWB → Customer Satisfaction			.094		.051	.146	Partial Mediation

** p<0.05, ** p<0.01, *** p<0.001.
† field data (2022).

further enhances the creativity of the employee and other workers (Lee et al. 2021). These qualities positively influence the productivity and innovation in the organization which consequently enhances the productivity of the organization. The study depicts that top management practices by the management of Korle Bu Teaching Hospital affect employees' innovative work behaviors positively. This finding is validated by studies (Rehman et al. 2019).

5.2 | A positive relationship between Training and Education practices and innovative employee work behavior

The findings further assert a positive relationship between training and education programs, and employee innovative work behaviors. As enshrined in prior studies (Battistelli et al. 2019), training and education

TABLE 4 Analysis of Customer Satisfaction across Models

Variables	Model 1 β (t-values)	Model 2 β (t-values)	Model 3 β (t-values)	Model 4 β (t-values)
Customer service	.068 (1.317)	.059 (1.229)	.007 (.171)	.013 (.350)
Type of organization	-.154(-2.844)*	-.063 (-1.214)	-.106 (-2.540)*	-.108 (-2.582)*
Brand	.065 (1.201)	.005 (.107)	.052 (1.277)	.056 (1.384)
Size of organization	.063 (1.167)	.014 (.274)	-.007 (-.170)	-.007 (-.186)
Innovative Work Behaviour		.373 (7.475)***	.079 (1.797)*	.053 (1.095)
Line of Information (LI)			.408 (8.245)***	.405 (8.130)***
Support	Resources (SR)			.106 (2.020)*
.115 (2.177)*				
Opportunity to Learn	Grow (OLR)			.239 (4.895)***
.221 (4.497)***				
Innovative Work Behaviour * LI				-.003 (-.052)
Innovative Work Behaviour * SR				.077 (1.281)
Innovative Work Behaviour * OLR				-.144 (-2.449)*
R^2	.030	.159	.481	.491
F value	2.847	13.794	42.105	31.546
Delta R^2		.128	.323	.010
Delta F value		55.880***	75.290***	2.240***
Degrees of freedom	4/367	5/366	8/363	11/360
Durbin Watson Test	2.240			

** p<0.05, ** p<0.01, *** p<0.001.
† field data (2022).

TABLE 5 Summary of Hypothesis Testing

Hypothesis	Outcome
Hypothesis 1	Accepted
Hypothesis 2	Accepted
Hypothesis 3	Accepted
Hypothesis 4	Accepted
Hypothesis 5a	Accepted
Hypothesis 5b	Accepted
Hypothesis 5c	Accepted
Hypothesis 5d	Accepted
Hypothesis 6	Accepted
Hypothesis 7	Not accepted

enhance innovative performance. The study portrays that at the organization (KBTH), learning is promoted through training and development activities (such as taking courses, teamwork, work experience, and undertaking projects). There is wide evidence that training and education increase job skills and knowledge as well as enhance performance (Myers 2018). Task-related learning promotes innovative behaviors as it fosters employees' sense of belonging in the organization. Employees also take advantage of the organization and surrounding coworkers to facilitate vicarious and observational learning (Egloffstein and Ifenthaler 2017) which enhances innovative work behavior. The results show similar findings, through the comprehensive education and training programs launched by Korle Bu Teaching Hospital, employees benefit by learning new job-relevant skills and thus promoting their innovative work behaviors as well as productivity.

5.3 | The positive impact of Performance Management System practices and Supplier Management practices

The findings also supported the assertion that performance management systems (a component of TQM practices) positively influence employee innovative work behavior. TQM practices are where employees have incorporated strategies of organizational effectiveness in accomplishing their visions and goals. Tracking and evaluating individual and organizational performance on account of meeting set goals can influence innovative work behaviors in the organization since it establishes a bar for employees need to exceed to be recognized as productive in the organization. Moreover, incorporating employees in strategic organizational effectiveness planning highlights the importance of the employees in accomplishing the missions of the organization, thus, fostering innovative behaviors by the employees (Lissillour 2021a). Performance

management such as performance appraisal has been documented to positively influence work behaviors as it identifies individual responsibilities, objectives, and required behaviors to achieve the organization's goals, indeed these appraisals pressure or compel employees to be innovative and ultimately result in individual creativity and innovation in the workplace (Curzi et al. 2019). The results imply that using performance management appraisals to measure the competence and importance of employees in their role in the organization positively affects their innovative work behavior and ultimately the productivity of the organization. Supplier management practices were found to positively affect innovative work behavior which is essential for organizations to have a competitive advantage in the modern world market. With globalization, organizational processes have become more dynamic and complex requiring organizations to engage with suppliers so this study aligns with several previous studies that argue that supply management is essential for an organization's innovativeness (Azadegan and Dooley 2010).

5.4 | Employee empowerment boosts the impact of TQM on customer satisfaction.

The study also assessed the relationship between total quality management and customer satisfaction moderated by employee empowerment. This implies that employee empowerment reinforces the positive impact of TQM practices and customer satisfaction. Organizational TQM has been found to positively affect the quality of products and health services (Dubey et al. 2018) which adds value to the organization and improves its capacity in the competitive market. The study not only found a positive relationship between TQM and customer satisfaction, but it also showed that employee empowerment reinforces this positive relationship. Yue et al. (2011) also documented a relationship between empowerment and the success of TQM practices. Customer satisfaction improves when they have confidence in the expert and technical services they receive, and empowering staff makes them more confident in the services they render to the customers.

6 | CONCLUSION

This study contributes by showing that TQM practices particularly top management commitment and performance management systems have a positive statistical impact on customer satisfaction. That is, an improvement in these practices increases customer satisfaction in the facilities. Also, using innovative employee work behavior as a mediating factor, there was a positive significant impact of top management commitment, training and education, supplier management, and performance management system on customer satisfaction among the teaching hospitals in Ghana. Lastly, it is concluded that the impact of TQM practices on customer satisfaction through innovative employee work behavior is increased or improved through employee empowerment. As empirically demonstrated in the study, management commitment enhances employees' innovative behaviors. Managers' readiness to redress issues faced by employees was highly evident in the study. This generally improves employees' well-being (both physical and mental), consequently boosting their productive capabilities and input to the organization. Moreover, the strategic leadership style has been known to combine various productive factors efficiently. This can potentially promote innovative behaviors (such as identifying key problems and creating novel ideas). This study further demonstrates the importance of training and education in organizations and the use of specialized structures to systematically deliver on-the-job training is essential for enhancing workers' productivity (Rodriguez-Escobar and Lissillour 2022). It equips workers, particularly junior and new staff with the right knowledge and skill set to efficiently perform their assigned tasks. Health facilities must organize training programs and give opportunities to further their education. The benefits of training and education are not limited to individual employees but also contribute to boosting organizational capabilities. The findings assert a positive relationship between suppliers' management and innovative employee work behavior. The goal of every organization is to meet customer satisfaction. Suppliers are vital for achieving the goal. Quality suppliers guarantee the provision of high-quality and standard inputs that streamline operating procedures. Quality suppliers guarantee the provision of quality and standard input materials that facilitate operational processes. Additionally, involving suppliers in product development can result in the development of new methods for new tasks and the implementation of creative ideas. Health facilities are encouraged to put measures in place to ensure proper supply management and involve them in product development. One of the efficient ways to promote innovative work behaviors among employees is performance appraisal. Through performance, review employees realize their strengths and weaknesses and consequently improve upon themselves. Also, it creates an avenue for managers to acknowledge and commend employees on their good work. This fuels employees to be more productive in their respective tasks. Moreover, having an appraisal system in place keeps workers in check since their actions do not go unnoticed. Hospitals must ensure proper performance management systems. Employees' effort-reward fairness perception should be important to hospitals. Overall total quality management is highlighted to affect customer satisfaction through its influence on innovative employee work behaviors. Quality management enhances employee innovative behaviors. As discussed earlier, a manager's orientation to encourage knowledge-sharing behaviors among employees has an impact on employees' innovative behaviors. Quality management practices such as commitment, coordination, supply management, and performance appraisal have an impact on innovative work behaviors. The first point of interaction between customers and the organization (in this case healthcare facilities) is the workers. Management can enhance customer satisfaction through its employees. Thus, promoting innovative behaviors among employees results in consumers' patronage of services and products. Even though the study posits a positive relationship between total quality management and customer

satisfaction, the asserted relationship exists only when there is a promotion of employee empowerment above a certain threshold. This implies that total quality management does not significantly influence customer satisfaction at all levels. Health organizations are therefore encouraged to promote EIWB and the competence of their staff actively. Moreover, high levels of EIWB can result in job satisfaction as well as strain turnover intentions. This can consequently have a significant positive toll on customer satisfaction. Finally, this study is not without limitations which lead to venues for future research. Although the sample size was rightfully specified using sampling techniques, a much larger sample size may have yielded more significant results. The study employed a cross-sectional study design, which focused on a particular group of people drawn from the various teaching hospitals and as such makes it difficult to draw inferences about the direction of causality. Future studies may examine the impact of TQM practices on customer satisfaction in a longitudinal approach. The study was limited to the five main teaching hospitals in Ghana, so future studies could gather data from different countries and compare results across markets (Cui et al. 2022). Future studies may include data from other healthcare facilities such as primary and secondary healthcare facilities. Lastly, future studies should engage in collective research (Beaulieu et al. 2024)to investigate the influence of TQM practices on customer satisfaction while providing a more sociological understanding of the power structure (Lissillour 2021a, Monod et al. 2023) and institutional context (Lissillour and Rodríguez-Escobar 2020, Wang 2024)within which these practices take place.

AUTHOR CONTRIBUTIONS

The first author contributed to conceptualization, data collection and writing. The second author contributed to data analysis, reviewing and editing.

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CONFLICT OF INTEREST

The authors declare no potential conflict of interests.

REFERENCES

(2015) *Quality management systems-fundamentals and vocabulary*. ISO, Geneva, Switzerland, 4th Edition.

(2015) *Quality management systems-requirements*. ISO, Geneva, Switzerland, 5th Edition.

A. Agarwal, U. (2014) Linking justice, trust and innovative work behaviour to work engagement. *Personnel review*, 43(1), 41–73.

Abbasi, M.M., Khan, M.M. & Rashid, K. (2011) Employee empowerment, service quality and customer satisfaction in pakistani banks. *The IUP Journal of Bank Management*, 10.

Abdullah, M., Uli, J. & Tari, J. (2012) The importance of soft factors for quality improvement and organisational performance. *International Journal of Productivity and Quality Management*, 9(2), 258–280.

Abrunhosa, A. & Moura E. Sá, P. (2008) Are tqm principles supporting innovation in the portuguese footwear industry? *Technovation*, 28(4), 208–221.

Adza-Awude, K. (2012) Assessment of total quality management practices on organisational performance at intravenous infusions limited koforidua. Ph.D. thesis, Name of the University.

Afsar, B. & Masood, M. (2018) Transformational leadership, creative self-efficacy, trust in supervisor, uncertainty avoidance, and innovative work behavior of nurses. *The Journal of Applied Behavioral Science*, 54(1), 36–61.

Aized, T. (2012) *Total quality management and six sigma*. : BoD–Books on Demand.

Al-Ali, A.M. Developing a total quality management framework for healthcare organizations. In: *Proceedings of the 2014 International Conference on Industrial Engineering and Operations Management, 2014*, Bali, Indonesia, pp. 889–898.

Al-Fawaeer, M., Hamdan, K.B. & Al-Zu'bi, H.A. (2012) A study of benchmarking influence on customer satisfaction. *International Journal of Business and Management*, 7(8), 108.

Al-Shdaifat, E.A. (2015) Implementation of total quality management in hospitals. *Journal of Taibah University Medical Sciences*, 10(4), 461–466.

Al-Swidi (2016) The impact of total quality management and entrepreneurial orientation on organizational performance. *International Journal of Quality & Reliability Management*, 33.

Albejaidi, F.M. (2010) Healthcare system in saudi arabia: An analysis of structure, total quality management and future challenges. *Journal of Alternative Perspectives in the Social Sciences*, 2(2), 794–818.

Azadegan, A. & Dooley, K.J. (2010) Supplier innovativeness, organizational learning styles and manufacturer performance: An empirical assessment. *Journal of operations management*, 28(6), 488–505.

Azevedo, A. & Shane, M.J. (2019) A new training program in developing cultural intelligence can also improve innovative work behavior and resilience: A longitudinal pilot study of graduate students and professional employees. *The International Journal of Management Education*, 17(3), 100303.

Balbastre, F. & Luzón, M.M. (2003) Self-assessment application and learning in organizations: A special reference to the ontological dimension. *Total Quality Management & Business Excellence*, 14(3), 367–388.

Battistelli, A., Odoardi, C., Vandenberghe, C., Di Napoli, G. & Piccione, L. (2019) Information sharing and innovative work behavior: The role of work-based learning, challenging tasks, and organizational commitment. *Human Resource Development Quarterly*, 30(3), 361–381.

Beaulieu, M., Rebolledo, C. & Lissillour, R. (2024) Collaborative research competencies in supply chain management: The role of boundary spanning and reflexivity. *The International Journal of Logistics Management*, 35(2), 305–331. doi:10.1108/IJLM-07-2022-0277.

Bos-Nehles, A.C. & Veenendaal, A.A. (2019) Perceptions of hr practices and innovative work behavior: the moderating effect of an innovative climate. *The International Journal of Human Resource Management*, 30(18), 2661–2683.

Chang, C., Chiu, C. & Chen, C. (2010) The effect of tqm practices on employee satisfaction and loyalty in government. *Total Quality Management*, 21(12), 1299–1314.

Chen, C.J. & Huang, J.W. (2009) Strategic human resource practices and innovation performance—the mediating role of knowledge management capacity. *Journal of business research*, 62(1), 104–114.

Chienwattanasook, K. & Jermsittiparsen, K. (2019) Influence of entrepreneurial orientation and total quality management on organizational performance of pharmaceutical smes in thailand with moderating role of organizational learning. *Systematic Reviews in*

Pharmacy, 10(2), 223–233.
Criado, F. & Calvo-Mora, A. (2009) Excellence profiles in spanish firms with quality management systems. *Total Quality Management*, 20(6), 655–679.
Cui, Y., Lissillour, R., Cheben, J., Drahos, H. & Duan, J. (2022) The social influence on sustainable consumption behavior during covid-19 from the perspective of intergenerational theory: a cross-market investigation in china and europe. *Corporate social responsibility and sustainable management*, 29(4), 996–1020. doi:10.1002/csr.2250.
Curzi, Y., Fabbri, T., Scapolan, A.C. & Boscolo, S. (2019) Performance appraisal and innovative behavior in the digital era. *Frontiers in psychology*, 10, 457742.
Daoud Abu-Doleh, J. (2012) Human resource management and total quality management linkage–rhetoric and reality: evidence from an empirical study. *International Journal of Commerce and Management*, 22(3), 219–234.
Dawabsheh, M., Hussein, A. & Jermsittiparsert, K. (2019) Retracted: The triangular relationship between tqm, organizational excellence and organizational performance: A case of arab american university palestine. *Management Science Letters*, 9(6), 921–932.
Dominic, A., Ogundipe, A. & Ogundipe, O. (2019) Determinants of women's access to healthcare services in sub-saharan africa. *The Open Public Health Journal*, 12(1).
Dubey, R., Gunasekaran, A., Childe, S.J., Papadopoulos, T., Hazen, B.T. & Roubaud, D. (2018) Examining top management commitment to tqm diffusion using institutional and upper echelon theories. *International Journal of Production Research*, 56(8), 2988–3006.
Egloffstein, M. & Ifenthaler, D. (2017) Employee perspectives on moocs for workplace learning. *TechTrends*, 61(1), 65–70.
Eisenberger, R. & Rhoades, L. (2001) Incremental effects of reward on creativity. *Journal of personality and social psychology*, 81(4), 728.
Faruk, N., Surajudeen-Bakinde, N.T., Abdulkarim, A., Oloyede, A.A., Olawoyin, L., Bello, O.W. et al. (2020) Rural healthcare delivery in sub-saharan africa: An ict-driven approach. *International Journal of Healthcare Information Systems and Informatics (IJHISI)*, 15(3), 1–21.
Franco, M. & Haase, H. (2016) Internationalisation of born globals: the role of strategic alliances. *European Journal of International Management*, 10(2), 181–201.
Geralis, M. & Terziovski, M. (2003) A quantitative analysis of the relationship between empowerment practices and service quality outcomes. *Total Quality Management & Business Excellence*, 14(1), 45–62.
Gerstein, M. & Friedman, H.H. (2017) A new corporate ethics and leadership paradigm for the age of creativity. *Journal of Accounting, Ethics and Public Policy*, 18(2).
Guechtouli, M. & Purvis, B. (2024) Social media for information sharing in an industrial setting: Evidence from the chinese automotive industry. *Management Research Quarterly*, 1(1), 4–12.
Hair Jr, J.F., Sarstedt, M., Hopkins, L. & Kuppelwieser, V.G. (2014) Partial least squares structural equation modeling (pls-sem). *European Business Review*, 26(2), 106–121.
Hassan, A.S. & Jaaron, A.A. (2021) Total quality management for enhancing organizational performance: The mediating role of green manufacturing practices. *Journal of Cleaner Production*, 308, 127366.
Heidari Gorji, A.M. & Farooquie, J.A. (2011) A comparative study of total quality management of health care system in india and iran. *BMC research notes*, 4(1), 1–5.
Hoegl, M. & Wagner, S.M. (2005) Buyer-supplier collaboration in product development projects. *Journal of management*, 31(4), 530–548.
Inkinen, H.T., Kianto, A. & Vanhala, M. (2015) Knowledge management practices and innovation performance in finland. *Baltic Journal of Management*, 10(4), 432–455.
Ismail, H.N. & Rishani, M. (2018) The relationships among performance appraisal satisfaction, career development and creative behavior. *The Journal of Developing Areas*, 52(3), 109–124.
Jahanshahi, A.A., Gashti, M.A.H., Mirdamadi, S.A. et al. (2011) Study the effects of customer service and product quality on customer satisfaction and loyalty. *International Journal of Humanities and Social Science*, 1(7), 253–260.
Janssen, O. (2000) Job demands, perceptions of effort-reward fairness, and innovative work behavior. *Journal of Occupational and Organizational Psychology*, 73, 287–302.
Javed, B., Naqvi, S.M.M.R., Khan, A.K., Arjoon, S. & Tayyeb, H.H. (2019) Impact of inclusive leadership on innovative work behavior: The role of psychological safety. *Journal of Management & Organization*, 25(1), 117–136.
Jiménez-Jiménez, D. & Sanz-Valle, R. (2005) Innovation and human resource management fit: an empirical study. *International journal of Manpower*, 26(4), 364–381.
Juran, J.M., Godfrey, A.B., Hoogstoel, R.E. et al. (1998) *Juran's quality handbook*, 5th Edition. New York, NY: McGraw-Hill.
Kakkar, H., Sivanathan, N. & Gobel, M.S. (2020) Fall from grace: The role of dominance and prestige in the punishment of high-status actors. *Academy of Management Journal*, 63(2), 530–553.
Kanter, R.M. (1993) *Men and Women of the Corporation*, 2nd Edition. New York, NY: Basic Books.
Kaynak, H. (2003) The relationship between total quality management practices and their effects on firm performance. *Journal of Operations Management*, 21(4), 405–435.
Kim, W. & Park, J. (2017) *Examining structural relationships between work engagement, organizational procedural justice, knowledge sharing, and innovative work behavior for sustainable organizations*. Vol. 9. : .
Kotler, P. & Keller, K.L. (2000) *Marketing management*, 14th Edition. New York, NY: Prentice Hall.
Lee, W.R., Choi, S.B. & Kang, S.W. (2021) How leaders' positive feedback influences employees' innovative behavior: The mediating role of voice behavior and job autonomy. *Sustainability*, 13(4), 1901.
Lissillour, R. How to engage the crowd for innovation in restricted markets? the case of google in china. In: *2018 Engaged Management Scholarship Conference, Aug. 2018*, Philadelphia, PA.
Lissillour, R. (2021) Changement organisationnel et la pratique de déviance positive: cas d'une implantation d'outils de rationalisation productive (erp) en chine. *RIMHE: Revue Interdisciplinaire Management, Homme & Entreprise*, 42(10), 3–26. doi:10.3917/rimhe.042.0003.
Lissillour, R. (2021) Contradiction institutionnelle et catégories cognitives : un couplage mis à mal suite à la mise en place de progiciels de gestion intégrée. *Management & Prospective*, 38(5), 19–47. doi:10.3917/g2000.385.0019.
Lissillour, R. & Rodríguez-Escobar, J.A. (2020) Flexible coupling-weakness or strength? evidence in the post-implementation of an erp system. *Recherches en Sciences de Gestion*, 141(6), 31–65. doi:10.3917/resg.141.0031.
Lissillour, R. & Ruel, S. (2023) Chinese social media for informal knowledge sharing in the supply chain. *Supply Chain Forum: An International Journal*, 24(4), 443–461. doi:10.1080/16258312.2022.2130006.
Lissillour, R. & Sahut, J.M. (2023) Uses of information systems to develop trust in family firms. *Business & Information Systems Engineering*, 65(2), 127–141. doi:10.1007/s12599-022-00776-6.
Luthans, F., Rubach, M.J. & Marsnik, P. (1995) Going beyond total quality: The characteristics, techniques, and measures of learning organizations. *The International Journal of Organizational Analysis*, 3(1), 24–44.
López-Mielgo, N., Montes-Peón, J.M. & Vázquez-Ordás, C.J. (2009) Our quality and innovation management conflicting activities?

Technovation, 29(8), 537–545.
Martínez-Costa, M. & Martínez-Lorente, A.R. (2008) Does quality management foster or hinder innovation? an empirical study of spanish companies. *Total Quality Management & Business Excellence*, 19(3), 209–221.
Monod, E., Lissillour, R., Köster, A. & Jiayin, Q. (2023) Does ai control or support? power shifts after ai system implementation in customer relationship management. *Journal of Decision Systems*, 32(3), 542–565. doi:10.1080/12460125.2022.2066051.
Myers, C.G. (2018) Coactive vicarious learning: Toward a relational theory of vicarious learning in organizations. *Academy of Management review*, 43(4), 610–634.
Nguyen, T.L.H. & Nagase, K. (2019) The influence of total quality management on customer satisfaction. *International journal of healthcare management*, 12(4), 277–285.
Ogaji, D.S., Giles, S., Daker-White, G. & Bower, P. (2015) A systematic review of patients' views on the quality of primary health care in sub-saharan africa. *SAGE open medicine*, 3, 2050312115608338.
Pastoriza, D., Arino, M.A. & Ricart, J.E. (2008) Ethical managerial behaviour as an antecedent of organizational social capital. *Journal of Business Ethics*, 78, 329–341.
Pilerot, O. & Limberg, L. (2011) Information sharing as a means to reach collective understanding: A study of design scholars' information practices. *Journal of Documentation*, 67(2), 312–333.
Podsakoff, P.M. & Organ, D.W. (1986) Self-reports in organizational research: Problems and prospects. *Journal of Management*, 12(4), 531–544.
Pramuka, B. & Adawiyah, W. (2012) The human-related dimensions of tqm practice in service settings. *American International Journal of Contemporary Research*, 2(1), 124–131.
Psychogios, A.G. & Priporas, C.V. (2007) Understanding total quality management in context: Qualitative research on managers' awareness of tqm aspects in the greek service industry. *Qualitative Report*, 12(1), 40–66.
Pulakos, E. & Ol'leary, R. (2011) Why is performance management broken? *Industrial and Organizational Psychology*, 4(2), 146–164.
Radaelli, G., Lettieri, E., Mura, M. & Spiller, N. (2014) Knowledge sharing and innovative work behaviour in healthcare: A micro-level investigation of direct and indirect effects. *Creativity and innovation management*, 23(4), 400–414.
Rehman, W.U., Ahmad, M., Allen, M.M., Raziq, M.M. & Riaz, A. (2019) High involvement hr systems and innovative work behaviour: the mediating role of psychological empowerment, and the moderating roles of manager and co-worker support. *European Journal of work and organizational psychology*, 28(4), 525–535.
Rodriguez-Escobar, J.A. & Lissillour, R. (2022) Organizational ambidexterity and the learning organization: the strategic role of a corporate university. *The Learning Organization*, 30(1), 55–75. doi:10.1108/TLO-01-2021-0011.
Rodriguez-Escobar, J.A., Lissillour, R. & Scotto, M. (2022) Formations à l'entrepreneuriat: les connaissances aptes à développer l'intention d'entreprendre. *Formation et Emploi*, 160(4), 31–57. doi:10.4000/formationemploi.11179.
Rostami, M., Ahmadian, L., Jahani, Y. et al. (2019) The effect of patient satisfaction with academic hospitals on their loyalty. *International Journal of Health Planning and Management*, 34, 726–735.
Salter, J. (1993) *Total quality management and applications to the construction industry*. Gainesville, FL: University of Florida.
Siegall, M. & Gardner, S. (2000) Contextual factors of psychological empowerment. *Personnel Review*, 29(6), 703–1015.
Singh, A.P. Effects of total quality management practices on performance: An empirical study of gafat armament industry, ethiopia. In: *Proceeding of the Third International Research Symposium, 2019*.
Soreshjany, G.A. & Dehkordi, H.J. (2014) Cost of total quality management (tqm), innovation and improvement of financial performance. *Uma Ética Para Quantos?*, XXXIII, 81–7.
Stander, M.W. & Rothmann, S. (2010) Psychological empowerment, job insecurity and employee engagement. *SA Journal of Industrial Psychology*, 36(1), 1–8.
Steffens, N.K., Munt, K.A., van Knippenberg, D., Platow, M.J. & Haslam, S.A. (2021) Advancing the social identity theory of leadership: A meta-analytic review of leader group prototypicality. *Organizational Psychology Review*, 11(1), 35–72.
Talha, M. (2004) Total quality management (tqm): an overview. *The bottom line*, 17(1), 15–19.
Thamizhmanii, S. & Hasan, S. (2010) A review on an employee empowerment in tqm practice. *Journal of Achievements in Materials and Manufacturing Engineering*, 39(2), 204–210.
Topalović, S. (2015) The implementation of total quality management in order to improve production performance and enhancing the level of customer satisfaction. *Procedia technology*, 19, 1016–1022.
Wang, J. (2024) Selective coupling in hybrid organization: Institutional logic contradiction in the context of erp post-implementation. *Management Research Quarterly*, 1(1), 13–25.
Wang, X.H., Fang, Y., Qureshi, I. & Janssen, O. (2015) Understanding employee innovative behavior: Integrating the social network and leader–member exchange perspectives. *Journal of organizational behavior*, 36(3), 403–420.
Yue, J., Ooi, K. & Keong, C. (2011) The relationship between people-related total quality management (tqm) practices, job satisfaction and turnover intention: a literature review and proposed conceptual model. *African Journal of Business Management*, 5(15), 6632–6639.
Yusuf, Y., Gunasekaran, A. & Dan, G. (2007) Implementation of tqm in china and organization performance: an empirical investigation. *Total Quality Management*, 18(5), 509–530.
Zaid, A.A., Arqawi, S.M., Mwais, R.M.A., Al Shobaki, M.J. & Abu-Naser, S.S. (2020) The impact of total quality management and perceived service quality on patient satisfaction and behavior intention in palestinian healthcare organizations. *Technology Reports of Kansai University*, 62(03), 221–232.
Zehir, C. & Sadikoglu, E. (2012) Relationships among total quality management practices: An empirical study in turkish industry. *International Journal of Performability Engineering*, 8(6), 667.
Zlatanović, D. & Mulej, M. (2015) Soft-systems approaches to knowledge-cum-values management as innovation drivers. *Baltic journal of management*, 10(4), 497–518.

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APPENDIX

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Ebenezer Prince Arhin is the Deputy Director of Human Resources for the largest hospital in the country Ghana (Korle Bu Teaching Hospital). Among some of the local and international organizations he worked with before joining Korle Bu Teaching Hospital are Sears Holdings, St Paul, USA, Kmart Corporation USA, Wyndham Virginia USA, Pan African University College (Lecturer) Ensign Company Ltd. KEANA Foundation (Founder) Gh. etc. Dr. Arhin is a highly resourceful, flexible, innovative, and enthusiastic individual with 15 years of experience in the Human Capital Development field focusing on the development and implementation of HR policies. His years of experience in Human Resources Management, including drafting and implementing HR, administration policies and regulations, working with various levels of clinical and non-clinical staff in organizational behavior, refresher course training, capacity building training, and corporate training. Dr. Arhin holds a Doctor of Business Administration degree from IPAG Business School.

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