Original Article

IJEISSAH

Mediating Effect of Employee Loyalty on the Relationship Between Human Resource Management Practices and Employee Performance: A Study among Nurses in the Public Health Care Sector in Yemen

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ABSTRACT

The study is carried out to explore the impact of HRM practices on employee loyalty, and employee performance among Nurses in The Public Health Care Sector in Yemen. It further investigates the mediating role of employee loyalty with HRM practices and employee performance. The data was collected through a questionnaire. About 248 Questionnaires were filled out by nurses working in government hospitals in Shabwah and Aden governorates. The structure equation modelling SEM was selected as the most suitable statistical technique to test the relationships among the variables of the study. The results showed significant direct relationships between each pair of variables. Moreover, the result revealed that loyalty mediates the relationship between HRM practices and employee performance among nurses in Yemeni public hospitals.

Background

Yemen's public health performance has drastically declined, falling below expectations (Rashad and Khadr, 2014). Its healthcare system is among the world's worst, exacerbated by the recent conflict, which pushed it to its limits.1 Even before the conflict, Yemen's healthcare was poor (Qirbi and Ismail, 2017). The conflict's deterioration of health systems necessitates research, particularly focusing on health workers for system adjustment and resilience (Woodward *et al.*, 2016). Further, substandard performance is attributed to factors like nepotism, sectarianism, and low employee loyalty, impacting nurse performance (Woodward, Sheahan, Martineau, and Sondorp, 2017), consistent with findings of low loyalty, poor performance, and inadequate services (Al-Dubai and Rampal, 2011). Research in conflict-affected health sectors is crucial (Newbrander, Waldman, and Shepherd-Banigan, 2011), making it particularly urgent in Yemen, a country with historically neglected health services (Qirbi *et al.*, 2017).

Statement of the Problem
Despite facing significant challenges from a turbulent environment, Yemen's public healthcare sector can improve performance through Human Resource Management (HRM) practices. Research indicates that HRM practices influence employee performance (Budhwar, Chand and Katou, 2007) and employee loyalty (Armstrong-Stassen and Schlosser, 2010; Costen and Salazar, 2011; Uzair, Razzaq, Sarfraz, and Nisar, 2017). Furthermore, increased employee loyalty leads to improved performance and service quality in healthcare (Peltier, Nill, and Schibrowsky, 2004; Peltier, Schibrowsky, and Nill, 2013). HRM practices, grounded in theories like Performance theory and social exchange theory, involve tools such as recruitment, selection, compensation, incentives, performance management, participation, and training (Albrecht, Bakker, Gruman, Macey, and Saks, 2015). Organizations increasingly adopt HRM due to technological advancements and environmental pressures to enhance loyalty and performance. However, there's a research gap regarding the specific interaction between HRM practices, employee loyalty, and performance among nurses, particularly the mediating role of employee loyalty in this relationship.

Research Objectives
Furthermore, the problems to be analyzed can be identified by asking the following research questions:

RQ1: What is the nature of the relationship between HRM Practices and employee performance?

RQ 2: What is the nature of the relationship between HRM Practices and employee loyalty? RQ 3: What is the nature of the relationship between employee loyalty and employee performance?

RQ 4: What is the mediating effect of employee loyalty on the relationship between HRM Practices and employee performance among Nurses at public hospitals in Aden and Shabwah, Yemen?

Literature Review

HRM Practices
Human Resource Management (HRM) is crucial for achieving a sustainable competitive advantage by optimizing resources and fostering human capital (Morgeson *et al.*, 2013). Human resources are considered a strategic asset essential for organizational performance and sustainability (Mullins, Brandes, and Dharwadkar, 2016). HRM involves both technical (recruitment, training, compensation, performance measurement) and strategic activities (teamwork, flexible workforce, worker empowerment, strategic needs diagnosis, and talent development) (Huselid, Jackson, and Schuler, 1997). Effective HRM requires human resource professional skills and business-related capabilities, creating unique, hard-to-imitate value (Wall and Wood, 2005). While a correlation exists between HRM practices and employee

performance, establishing a direct cause-effect is challenging due to numerous influencing factors and potential reverse causality (Wright, Gardner, and Moynihan, 2003). HRM practices, including recruitment, selection, performance evaluations, training, and compensation, are a dynamic process for resource acquisition, development, and deployment (Khan, 2010). Pfeffer (1994) identified 16 practices for competitive advantage, including employment security, selective hiring, information exchange, participation, training, incentives, and career planning. This study focuses on recruitment, training, performance evaluation, and compensation as key HRM practices.

Employee Loyalty

Employee loyalty is a complex and highly desired state, often difficult to achieve despite organizational efforts (Zakaria, Mohamad, Majid, Aziz and Rashid, 2019). While financial incentives can influence employee movement, true loyalty stems from factors like effective leadership and a strong sense of organizational connection. Employee loyalty is a psychological state that reflects the employee-organization relationship and influences employees' decision to stay (Khuong and Tien, 2013). It can also be viewed as an emotional attachment driven by shared organizational values and goals (Van Esch, Wei and Chiang, 2018; Yao, Qiu and Wei, 2019). Loyal employees demonstrate increased effort and commitment to organizational objectives. Reciprocity between employer and employee is crucial for fostering loyalty (Farrukh, Kalimuthuan, and Farrukh, 2019). Loyalty also involves identifying with organizational leaders and prioritizing organizational needs over personal ones (Antoncic and Antoncic, 2011). In the healthcare sector, specifically, nursing, loyalty, and retention are critical for care quality, cost-effectiveness, and patient confidence (Peltier, Nill, and Schibrowsky, 2004). A loyal nursing staff is essential for successful healthcare improvement initiatives.

Employee Performance

Employee performance, defined as actions that fulfill job responsibilities and organizational goals (Sulli Schleicher, Baumann, Sullivan, Levy, Hargrove and Barros-Riveravan, 2018), is crucial for organizational success and requires effective evaluation to facilitate career development and ensure needs are met (Armstrong-Stassen and Schlosser, 2010). In healthcare, employee performance, particularly among nurses who comprise the majority of healthcare providers (Al-Ahmadi, 2009), is a key driver of overall system performance and patient outcomes (Norrish and Rundall, 2001). High nurse performance, defined as the efficient fulfillment of patient care duties (Amarneh, Abu Al-Rub, and Abu Al-Rub, 2010), is essential for meeting patient needs in accordance with international quality standards, enhancing patient safety, and reducing healthcare costs (Tesfaye, Abera, Hailu, Nemera and Belina, 2015). Therefore, healthcare policymakers and hospital managers must prioritize improving nurses' performance to enhance service quality and efficiency (Cameron, Bright, and Caza, 2003).

The Relationship between Variables
The Direct Relationship between HRM Practices and Employee Performance

Despite the challenges of implementing HRM practices in the health sector, particularly in government-funded institutions (Bach, 2000), there is a growing recognition of their importance in achieving organizational goals, improving healthcare performance, and ultimately enhancing patient outcomes (Stanton, 2002). A wealth of research demonstrates the positive impact of HRM practices on various aspects of organizational success, including employee performance, turnover, profitability, and overall organizational performance (Katou and Budhwar, 2006; Shahzad, Bashir, and Ramay, 2008). Key HRM practices contributing to these positive outcomes include personnel planning, training and development, teamwork, compensation, performance appraisal, and employee participation (Dar, Bashir, Ghazanfar, and Abrar, 2014).

Furthermore, effective HRM practices contribute to employee development and motivation, leading to increased organizational strength and improved performance in healthcare settings (Van Esch, Wei, and

Chiang, 2018). However, despite this extensive body of research demonstrating the benefits of HRM, there remains a gap in understanding the specific relationship between HRM practices and employee performance among nurses in the Yemeni healthcare sector. This highlights a critical area for future research to inform strategies for improving healthcare delivery in Yemen.

Therefore, this study proposes the following hypothesis:

H1: there is a positive relationship between HRM practices and employee performance among nurses in Yemeni public hospitals.

The Direct Relationship between HRM Practices and Employee Loyalty
Employee loyalty, characterized by retention and commitment to organizational interests, can be fostered through improved job conditions, appropriate compensation (Armstrong-Stassen and Schlosser, 2010), and successful implementation of HRM practices (Costen and Salazar, 2011). Studies have highlighted the importance of HRM practices in cultivating employee loyalty in various contexts, including Japanese multinational companies in Morocco (Aljayi, Fjer, Guennioui, and Tamek, 2016) and Malaysian organizations (Uzair *et al.*, 2017). These studies emphasize that HRM practices, such as recruitment and selection, training and development, performance appraisal, and compensation and rewards, play a crucial role in enhancing employee loyalty and reducing turnover. Despite this existing research, there is a notable absence of studies investigating the relationship between HRM practices and employee loyalty among nurses in the Yemeni healthcare sector.

Therefore, this study proposes the following hypothesis:

H2: there is a positive relationship between HRM practices and employee loyalty among nurses in Yemeni public hospitals.

The Direct Relationship between Employee Loyalty and Employee Performance
The literature on the importance of employee Loyalty in improving the performance of employees is evident. It is based on the positive effects of job satisfaction on the commitment and love of employees for their work and their loyalty to their workplace. Moreover, Al-Ahmadi (2009) found that employee loyalty is an organizational citizenship behavior that reflects the devotion to the organization by advancing their interests and their image towards the beneficiaries. Moreover, Al-Meer (1995) confirmed that job performance positively correlates with employee loyalty, which confirms findings by prior researchers that employee loyalty is a strong determinant of performance. Yousef (1999) explains that the positive relationship between organizational commitment and performance indicates that increased loyalty leads individuals to exert more effort at work and increases productivity and performance. Meanwhile, Samad & Selangor, (2005) found that several motivational factors moderate the positive relationship between performance and loyalty, including the relationship with supervisors and colleagues, organizational policies, work conditions, salary, nature of the job, achievement, job security, and possibility of growth. On the same side, healthcare research suggests that employee Loyalty and other healthcare team members lead to improved employee performance and better quality of care (Peltier, Nill, and Schibrowsky, 2004). Meanwhile, Whiting, Podsakoff, and Pierce (2008) found that employee Loyalty interacts with Performance and contributes to helping individuals within the organization with high Performance. Also, Peltier, Schibrowsky, and Nill (2013) confirmed that improving employee loyalty in health care increased employee performance leads and provided high-quality services. Based on what has been addressed from the previous studies above, the research has found no studies on the relationship between employee loyalty and employee performance among nurses in the healthcare sector in Yemen. Therefore, this study proposes the following hypothesis:

H3: there is a positive relationship between employee loyalty and employee performance among nurses in Yemeni public hospitals.

Indirect Relationship between HRM Practices and Employee Performance through Employee Loyalty as a Mediating Variable

While the relationship between HRM practices and employee performance is crucial in today's competitive work environment, the mediating role of employee loyalty in this relationship remains largely unexplored. Although a mediating role for employee loyalty has been proposed in the relationship between HRM practices, employee commitment, and retention (Janjua and Gulzar, 2014), its specific influence on the HRM practices-employee performance link requires further investigation. This aligns with Kenny and Baron's (1986) theory of mediating variables, which emphasizes the interconnected relationships between independent, mediating, and dependent variables.

Therefore, this study proposes the following hypothesis:

H4: there is a positive relationship between HRM practices and employee performance through employee loyalty as a mediating variable among nurses in Yemeni public hospitals (sample of the studied study).

Methods

Based on the related theories of human resources, social exchange, and performance that discuss the relationship among human resources management Practices, employee loyalty, and employee performance, four dimensions of human resources management practices have been assigned to examine its influence on employee loyalty and employee performance and loyalty as shown in figure I:
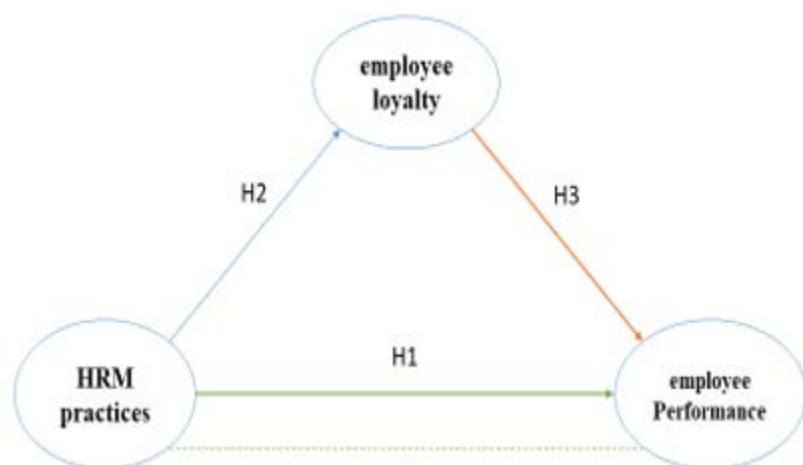

Figure I. Theoretical framework

Primary data were collected using a questionnaire to obtain data from the target population or the selected sample. The questionnaire items applied the criteria developed by researchers of this study and adapted similar studies regarding the purpose and target population. It has three sections containing 27 items, 18 related to HRM practices. The HRM practices (independent variable) are related to recruitment, training, performance appraisal, and compensation via drawing upon (Chen and Huang, 2009). Meanwhile, employee loyalty (mediator variable) used the measurement by (Arsić, Nikolić, Živković, Urošević and Mihajlović, 2012) that contains 4 items. Finally, employee performance (dependent variable), used the measurement by (Shahzadi, Javed, Pirzada, Nasreen and Khanam, 2014) that contains 3 items.

Results and Discussion

In this study, the study population represents all the nurses working in government hospitals in Shabwah and Aden governorates were selected as a study society. The number of nurses is 1428, of which 540 are

working at 7 public hospitals in the Shabwah governorate, and 880 are working at 5 public hospitals in the Aden governorate. The researcher chose nurses working in public hospitals in Aden and Shabwah precisely because of the importance of these vital sectors and their role in providing health services to a large proportion of the population, according to the latest population statistics in 2011 (1581000 inhabitants) in addition to the inhabitants of the neighboring provinces (Ministry of Health, 2014). Moreover, the issues that are faced by public hospitals in Aden and Shabwah, Yemen, a WHO report listed the severe issues as per their estimation while visiting Shabwah, Yemen, during a relief campaign in 2013, and it showed several scary statistics, especially in Aden and Shabwah, where morbidity rates after consultation were estimated at 24% and 26% in Shabwah and Aden respectively. However, the researcher used a stratified random sampling at the rate of 20% procedure to determine the desired number of respondents from each hospital, and a simple random sampling method to choose the sample of 284 nurses was calculated as follows: 108 of Shabwah and 176 of Aden (n= 284). The researcher distributed 284 questionnaires to the study sample, 248 of which were retrieved. The percentage of retrieved data (87%) of the total distributed questionnaire paper. The number of lost and non-validated questionnaires was 11 of the total distributed papers. Thus, (237) questionnaires were collected, which were analyzed to reach the objectives of this study.

A questionnaire was used to ensure data reliability and validity, and Cronbach's Alpha was employed to test the internal consistency of the pilot study scales. The SPSS program revealed the following Cronbach's Alpha values: 0.894 for HRM practices, 0.930 for employee loyalty, and 0.903 for employee performance. Five statistical methods were subsequently applied: Cronbach's Alpha for parameter stability, Exploratory Factor Analysis (EFA) to assess item saturation and factor non-interference, Confirmatory Factor Analysis (CFA) to confirm model fit, and Structural Equation Modeling (SEM) using AMOS to test hypotheses and verify the proposed model's compatibility.

Exploratory Factor Analysis (EFA)
EFA was conducted with factor loadings of greater than 0.40 for all variables as recommended by Hair, Hult, Ringle, and Sarstedt (2016). Moreover, KMO and Bartlett's test revealed the sampling adequacy and confirmed that the variables are correlated highly enough to provide a reasonable basis for factor analysis. The KMO values are .914 for HRM practices, .925 for employee loyalty, and .941 for employee Performance. Bartlett's test is significant at α=.05 for all variables.

After using EFA for measuring constructs by assessing the actual correlations between items, this study conducted confirmatory factor analysis (CFA) for the assessment-of-fit between observed data and the theoretical model, which specifies hypothesized causal relations between latent factors and their observed indicator variables.

Confirmatory Factor Analysis (CFA) of the Measurement Model of Variables
Initially, EFA produced a six-factor solution explaining 78.261% of the variance. Using AMOS 21, this study then performed first-order CFA to estimate the validity and reliability of six constructs i.e. recruitment, training, performance evaluation, and compensation, employee loyalty, and employee performance, that represent three variables, i.e. independent variable (HRM practices), mediator variable (employee loyalty), and dependent variable (employee performance). Besides, CFA also showed promising results in its goodness-of-fit test. The Chi-square results are as follows: 268.447, df=155; P=.000; CIMIND 1.732; CFI .969; TLI .962; RMSEA .053; GFI .867; AGFI .903; IFI .969, and NFI .930, (Byrne and Van de Vijver, 2010; Bentler, 2006). Meanwhile, in the case of individual reliability, AVE is higher than the test ratio (0.50) (Hair *et al.,* 2016), hence confirming the convergence validity. Moreover, the internal consistency of variables (CR) was also confirmed as the calculated values exceeded the recommended value (0.7). The correlation between the range of interval (0.135/0.673) is lower than the

threshold value (0.85); this confirmed the discriminant validity for all the study's constructs. As shown in Table I, this study fulfills this condition in every case.

Table I. Loading, Cronbach's alpha, CR, and AVE

Variables	Items	Factor loading	α (> 0.7)	CR (> 0.7)	AVE (> 0.5)
HRM Practices			0.894**0**		
recruitment	SEMP1	0.755	0.829**0**	0.832	0.623
	SEMP2	0.866			
	SEMP3	0.742			
Training and development			0.893**0**	0.898	0.690
	STRAIN1	0.652			
	STRAIN2	0.875			
	STRAIN3	0.917			
	STRAIN4	0.854			
performance evaluation			0.858**0**	0.859	0.669
	SEVALU1	0.822			
	SEVALU2	0.807			
	SEVALU3	0.825			
compensation			0.909**0**	0.911	0.773
	SCOMPEN1	0.853			
	SCOMPEN2	0.903			
	SC0MPEN3	0.881			
Employee Loyalty			0.930**0**	0.931	0.818
	Loyalty1	0.886			
	Loyalty2	0.941			
	Loyalty3	0.886			
Employee Performance			0.903**0**	0.907	0.711
	OP1	0.808			
	OP2	0.939			
	OP3	0.871			
	OP4	0.742			

Structural Equation Model

To test the direct and indirect hypotheses of this study and to know the direction, strength, and effect of the relationship, this study used structural equation modeling (SEM) to ascertain the model efficiency with its conformity with the data. Therefore, in order to ensure the quality and efficiency of the model, the researcher tested the efficiency of the factor loadings. where shows that the factor loadings of the underlying (latent) factors and the items they represented were high and exceeded the specific criterion (60), which is under acceptable criteria as recommended by (Hair *et al*., 2016). In addition, the obtained fit indices results were P < 0.5; chi-square 291.538; DF 163; P .000; CIMIND 1.789; CFI .965; TLI .959; RMSEA .055; GFI .893; AGFI .862; IFI .965; and NFI .924 which are under acceptable criteria as recommended by Byrne and Van de Vijver (2010); Bentler (2006), and Hair, *et al*., (2016). Thus, the results of goodness-of-fit indices indicated irrefutable evidence of an adequate model fit to the data as shown in Figure II.
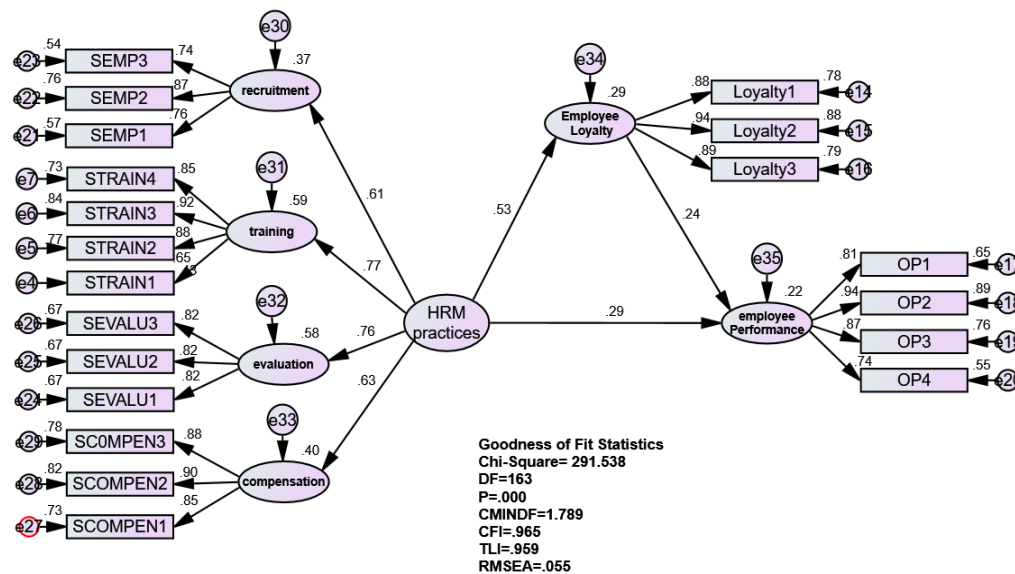
Figure 2. Structural Equation Modeling (SEM)

Hypotheses Testing

After verifying the model fit, the researcher tested the hypotheses of the theoretical model. The results explain the structural equation test that HRM practices have a positive effect directly on employee performance (b =0.29, t-values = 3.276, P-values= .001 and SE= .178) among nurses working at government hospitals in Aden and Shabwah governorates in Yemen, which typified that the adopting optimal HRM strategies to manage, direct, and motivate employee are able to strengthen their capabilities, skills, and employee motivation, hence create a source of value towards achieving strategic objectives. This finding is consistent with (Katou and Budhwar, 2010; Dar, *et al.*, 2014; Van Esch, Wei and Chiang, 2018; Rodwell and Teo, 2008; Yang and Lin, 2009). Hence, this study accepts H1. Besides, the results confirmed that HRM practices have a positive effect directly on employee loyalty (b =0.53, t-values = 5.730, P-values= .000, and SE= .201) among nurses working at government hospitals in Aden and Shabwah governorates in Yemen. This finding is consistent with (Armstrong, *et al.*, 2010; Costen and Salazar, 2011; Aljayi, *et al.*, 2016; Uzair, *et al.*, 2017). Consequently, the H2 was accepted. Furthermore, there is a positive effect between employee loyalty and employee performance (b =0.24, t-values = 3.039, P-values= .002 and SE= .072) among nurses working at government hospitals in Aden and Shabwah governorates in Yemen. This finding is consistent with (Rosenstein and O'Daniel, 2005; Peltier, *et al.*, 2004; Peltier, *et al.*, 2013). Moreover, H1, H2, and H3 were accepted. This means that all variables have a direct effect on each other, illustrated as follows:

Table II. Direct Impact between the Study Variables

Variable	Path	Variable	Path	S.E.	C.R.	P	Result
HRM Practices	<---	employee performance	**0**.29	0.178	3.276	0.001	Significant
HRM Practices	<---	Employee Loyalty	0.53	0.201	5.730	***	Significant
Employee Loyalty	<---	Employee Performance	0.24	0.072	3.039	0.002	Significant

Note: Estimate=Path coefficient; S.E.=Standard error (t-value); C.R.=Critical ratio

Nevertheless, the outcome of squared multiple correlations emphasized that HRM practices explained 0.285 (28.5%) of the variance of employee loyalty and 0.215 (21.7%) of the variance of employee performance. Cohen (2013) demonstrated that the closer to 1, the more the independent variable explains the dependent variable.

Mediation Effect

This study utilized Baron and Kenny's (1986) approach to test the mediation effect of employee loyalty on the relationship between HRM practices and employee performance. The results confirmed that H1, H2, and H3 met the conditions for mediation, with an indirect effect strength of 0.13, classified as moderate according to Preacher and Kelley's (2011) distribution (small=.01, moderate=.09, large=.20). The total effect was calculated as 0.29 + 0.13 = 0.42, indicating that 42% of the effect of HRM practices on employee performance is explained through employee loyalty. The variance accounted for (VAF) was calculated as 0.29 / 0.42 = 0.690, or 69%, demonstrating partial mediation, as it falls within the 20-80% range suggested by Hair *et al.*, (2016). The validity of the indirect relationship was further supported by the bias-corrected percentile method, with upper and lower bounds of 0.482 and 0.068, respectively, indicating a good range.

Table III. Testing Significance of the Indirect Effect (Mediation)

Hypothesis	P-value	T-value (CR)	Bias-corrected percentile method			Bias-corrected percentile method		Indirect effect test results	Result
			Indirect	Direct	Total effect	Upper (BC)	Lower (BC)	(Bootstrap stand error) (TWO) Tailed Significance (BC)	
Indirect positive relationship between HRM practices and employee performance through the employee loyalty as a mediating	.001	3.276	0.13	0.29	0.42	0.482	0.068	**.010**	Partial mediation

According to the current study, it is clear to us through the model that HRM practices have a causal relationship with employee performance through employee loyalty. In this sense, employee loyalty explains the causal effect of HRM practices on employee performance. The theoretical model proposed by this study fits the data collected from the target population, in which these results also explained that employee loyalty is a Partial mediation variable in explaining the relationship between HRM practices and employee performance among nurses working at government hospitals in Aden and Shabwah governorates in Yemen. Hence, the results show that the mediation conditions defined by Baron and Keney (1986) are met.

Conclusion

This study confirmed the theoretical framework proposing that Human Resource Management (HRM) practices positively influence employee performance, with employee loyalty acting as a significant mediating variable. Specifically, in Yemen's conflict-affected public healthcare sector, HRM practices such as recruitment, training, evaluation, and compensation were found to enhance both loyalty and performance among nurses. By establishing employee loyalty as a key mechanism linking HRM practices to performance outcomes, this research fills a critical gap in health sector studies—particularly within

unstable political environments. The study contributes to both HRM and contingency management literature by providing empirical evidence from a conflict context, emphasizing the importance of strategic HRM even amid crisis. Future research is encouraged to explore additional mediating variables, such as Islamic work ethics, to further enrich understanding of performance dynamics in similar challenging environments.

Declarations

Ethics Approval and Consent to Participate: Ethical considerations in quantitative data collection involve obtaining informed consent, clearly explaining the study, ensuring participant privacy, preserving confidentiality, and securing personal data against unauthorized access.

Conflicts of Interest: There is no conflict of interest in the author's byline.

Acknowledgement: Appreciation is expressed to the participants for their cooperation and devoting invaluable times for the research process.

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