



THE MEDIATING ROLE OF ORGANISATIONAL COMMITMENT BETWEEN TOTAL REWARD SYSTEMS, EMPLOYEE ATTRACTION AND RETENTION IN BOTSWANA'S PUBLIC HEALTH SECTOR

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Abstract

The service quality of public sector organisations in Botswana is generally considered to be less satisfactory than the private sector. One of the myriads of reasons is arguably reward and punishment system not being applied firmly and consistently. This research investigates the relationship between reward system and employee attraction and retention, as well as the extent to which these rewards influence workforce stability in the public health sector in Botswana. The study adopted a pragmatist approach using an exploratory sequential mixed-methods design. Employing semi-structured face-to-face interviews and structured questionnaire to a stratified random sample of 228 doctors and nurses for data collection. For qualitative Thematic coding and categorisation for qualitative, while SPSS version 20.0, employing descriptive statistics and linear regression analysis were used. The linear regression analysis revealed that extrinsic rewards significantly drive employee attraction, while intrinsic rewards are the strongest predictors of retention. Social rewards play a complementary yet significant role, reinforcing the need for a balanced and integrated total reward system. To ensure loyalty, commitment and retain self-motivated star performers within the public health institutions in Botswana, it is critical that managers engender and place high premium on employees' intrinsic rewards among others. The empirical evidence clearly demonstrates the positive effect organisational support, both in cash and in kind, have on the employees of the public health sector, confirming that enhanced intrinsic motivation and rewards is a predictor of employee attraction and retention.

Keywords

Total reward; Employee attraction; Employee retention; Organisational Commitment

1. Introduction

The attraction and retention of health professionals continue to be a major challenge worldwide, especially in developing countries such as Botswana. The public health sector is a key component of the country's development, but continues to suffer from high turnover, skills shortages and difficulties in attracting qualified staff (Thusi & Nkgapele, 2024). The problems are even worse in Sub-Saharan Africa, where the region accounts for an estimated 24% of the world's disease burden, but has only 3% of the world's health workforce (Thusi & Nkgapele, 2024). Botswana's service delivery is also under pressure from shortages of doctors and nurses, and migration to the higher-paying private and international systems.

Total reward systems that combine extrinsic, intrinsic and social rewards are becoming more widely recognised as critical tools for improving motivation, satisfaction and organisational commitment (Manjenje & Muhanga, 2021; Adesina & Egbuta, 2025). However, Botswana reward systems tend to be

too much focused on financial incentives and ignore broader motivational factors (Tshukudu, 2020). Previous studies have predominantly examined extrinsic, intrinsic or social incentives in isolation and few empirical studies have integrated these reward elements into one model to explain employee attraction and retention. Thus, there exists a significant empirical and contextual lacuna in the study on the information on the interaction contribution of total reward systems, especially in the public health sector in poor countries (Khan, Roychowdhury & Meghani, 2020; Ahmad et al., 2023).

2. Purpose and Problem Statement

The public health sector in Botswana is confronted with a persistent problem of attracting and retaining skilled healthcare professionals, despite the existence of formal reward structures (Mlaudzi, Goel & Molosiwa, 2021). Botswana has not been spared from the brain-drain phenomenon for greener pastures in other countries, mainly United Kingdom and South Africa among others (Ombogo, 2023; Thokwane et al., 2022). This study therefore intends to critically examine the effectiveness of total reward systems in influencing employee attraction and retention within the health sector.

3. Literature Review

3.1 Employee attraction and retention in the Public Health Sector

Employee attraction is a critical determinant of organisational success (Mohamed, Gökler & Orhun, 2023) in the public sector. Recruitment processes play a central role in shaping applicants' perceptions, with job and organisational characteristics influencing attraction (Antony & George, 2021). Pay is one of the most significant factors affecting job choice decisions often outweighing organisational attitudes (Mohamed et al., 2023). Applicants tend to prefer organisations offering competitive salaries, flexible benefits, and individualised reward systems (Garai-Fodor et al., 2023). Effective attraction strategies therefore require organisations to analyse recruitment strengths, define job requirements, and utilise appropriate recruitment channels (Manjenje & Muhanga, 2021). Employee retention involves creating an environment that encourages employees to remain within the organisation (Alhmoud and Rjoub, 2019). High turnover is costly, with replacement costs estimated at 150%–250% of an employee's salary (Crisp, 2021). Retention strategies include job extension, employee participation, and job rotation, which enhance motivation and engagement (Scott, Waite & Reede, 2021; Linge, 2019). Organisational reputation and competitive incentives also influence retention (Dias et al., 2022).

3.2 Extrinsic, Intrinsic and Social Reward Typology

This study is based on the Total Reward philosophy that defines the rewards employees receive as extrinsic, intrinsic and social rewards. The total reward theory states that employees' motivation is not only the pay but also the financial and non-financial rewards (Armstrong & Taylor, 2023). Extrinsic rewards include salaries, allowances, bonuses, pensions, job security and other financial rewards that satisfy the economic needs of employees and enhance the organisational attractiveness during recruitment (Armstrong, 2021). In the skill-shortage fields such as healthcare, the competitive pay has always been regarded as one of the most essential factors in attracting employees (Green, Owen, Atfield, Baldauf & Bramley, 2020; Kölling, 2023). However, financial incentives alone are often not sufficient to promote long-term engagement and retention (Green et al., 2023).

Herzberg's Two-Factor Theory explains that the main factors that impact job satisfaction are intrinsic rewards such as recognition, autonomy, achievement, responsibility, career advancement, skill development and meaningful work (Peramatzis & Galanakis, 2022; Graves, 2025). These rewards are more effective than the financial incentives only to improve the organisational commitment and employee retention (Sowunmi, 2024; Chepngeno, Macharia & Mbiyu, 2025). Social rewards such as supportive supervision, teamwork, trust, organisational culture, and positive workplace relationships lead to employees to feel emotionally attached to the organization (Birmingham & Holt-Lunstad, 2024; Zhang & Gao, 2025). Social rewards are not as important in attracting employees but they improve retention by increasing job satisfaction, organisational commitment and intent to stay in the organisation (Barros & Pereira, 2022; Ahmad et al., 2023).

3.3 Total Reward Strategies for Attraction and Retention

The provision of benefits forms a central component of total reward strategies. Benefits are essential for

maintaining employee satisfaction, commitment, and performance (Armstrong & Taylor 2023). Employees have diverse needs, and some value benefits more than direct financial compensation. Competitive benefits packages are therefore associated with higher levels of job satisfaction and reduced turnover intentions (Ejikeme et al., 2020; Hossain et al., 2021; Arwa et al., 2019). Benefits equally serve as a key attraction mechanism during recruitment, influencing applicants' perceptions of the organisation (Donatus, 2020).

3.4 Organisational commitment as a mediator between total reward systems and employee attraction and retention

Commitment reflects a psychological attachment that influences employees' decisions to remain with an organisation (Dirwan et al., 2024). Total reward systems shape this commitment by influencing job satisfaction and perceived organisational support. Affective commitment is strengthened by intrinsic rewards such as recognition and career development, while continuance commitment is influenced by financial rewards and job security (Dirwan et al., 2024). Normative commitment is reinforced by fairness and organisational culture. Over time, reward systems influence retention through stages of commitment, from compliance (driven by extrinsic rewards) to identification and internalisation (driven by intrinsic and social rewards). Factors such as leadership style, organisational structure, and work environment further shape this relationship.

4. Hypotheses development

- H1:** Extrinsic rewards have a positive and significant effect on organisational commitment.
- H2:** Intrinsic rewards have a positive and significant effect on organisational commitment.
- H3:** Social rewards have a positive and significant effect on organisational commitment.
- H4:** Organisational commitment has a positive and significant effect on employee attraction.
- H5:** Organisational commitment has a positive and significant effect on employee retention.

5. Theoretical Context

The current study is based on Herzberg's Two-Factor Theory. According to Herzberg's theory, job factors are divided into hygiene factors and motivators (Mehrad, 2020). Extrinsic hygiene factors include company policies, compensation, supervision quality, benefits, interpersonal relations, job security, working conditions, and pay rate (Zhang et al., 2020; Ryan, Parcero & Daly, 2025). Motivators are intrinsic and are recognition, achievement, career development, personal growth, job interest and responsibility. The theory suggests that hygiene factors are the lack of which can cause dissatisfaction, but their presence does not ensure satisfaction (Saad, 2018; Peramatzis & Galanakis, 2022). Hence, total reward systems include both types of reward systems to encourage employee motivation.

5.1 Conceptual framework

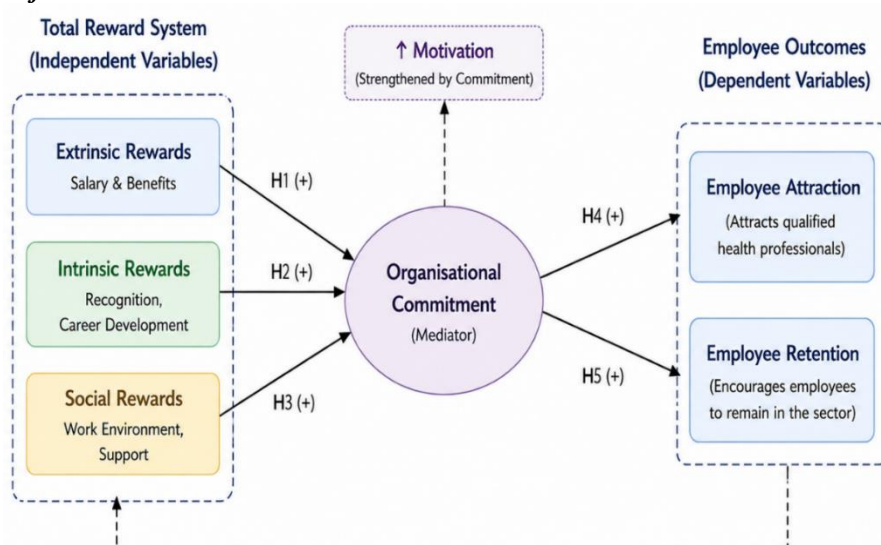


Figure 1: The conceptual model

Extrinsic rewards are tangible incentives provided by organisations (Okwuise & Ndudi, 2023). Salary is a key factor influencing employee attraction and retention, with competitive pay improving organisational ability to secure and retain skilled staff (Kumar, 2022; Armstrong, 2012). Intrinsic rewards refer to internal satisfaction (Widodo & Damayanti, 2020), these factors enhance job satisfaction and strengthen employee retention, as intrinsically satisfied employees are more committed to their organisation (Ogeto & Simiyu, 2021). Social rewards involve workplace relationships, including supportive supervision and positive colleague interactions (Birmingham & Holt-Lunstad, 2024). Organisational commitment strengthens both attraction and retention by fostering employee attachment, productivity, and positive word-of-mouth, which enhances organisational reputation and attracts new employees (Widodo & Damayanti, 2020).

6. Methodology

6.1 Research Design

The study which follows exploratory sequential design adopts a pragmatic approach, using semi-structured face-to-face interviews and survey for qualitative and quantitative data collection respectively. Employing purposive sampling for qualitative data and survey stratified random sampling for quantitative data (Sunder and Lewis, 2019).

6.2 Population and Sampling techniques

The target population comprised over 18,000 employees working in Botswana's public health sector, including managerial, professional, clinical, and support staff (Mackenzie & Filiz, 2023). However, the study population was restricted to doctors and nurses because these cadres constitute the primary frontline healthcare professionals directly involved in patient care and are the groups most affected by recruitment and retention challenges in the public health sector. Consequently, they were considered the most appropriate participants for investigating the influence of total reward systems on employee attraction and retention. For the qualitative phase, a purposive sample of 10 participants, comprising healthcare professionals and selected managerial staff responsible for human resource and workforce management, was used to obtain in-depth insights into reward practices. For the quantitative phase, 228 doctors and nurses were selected using stratified random sampling to ensure adequate representation of the two professional groups.

6.3 Data Collection Procedures

Qualitative data were collected through semi-structured face-to-face interviews and audio-recorded (Adeoye-Olatunde & Olenik, 2021). While a structured questionnaire using a five-point Likert scale, measuring key variables were employed for quantitative data.

6.4 Data Analysis Techniques

The data obtained from the questionnaires were analysed using simple, descriptive, statistical methods, employing the Statistical Package for Social Science (SPSS) version 20.0. The comparative method of data analysis involves coding and categorising the pattern and themes, which emerged from the interview data (Lochmiller, 2021), was used for qualitative data and then quantified using Microsoft office excel format. Descriptive statistics (e.g. means and standard deviations) were used to describe the data in summary form. Pearson product- moment correlation coefficient was used to measure the relationships between the variables.

7. Ethical Considerations

Ethical clearance for this study was obtained from the relevant institutional ethics committee prior to data collection. Permission to conduct the study was also obtained from the Botswana Ministry of Health and participating health facilities. Participation in the study was entirely voluntary, and all participants were informed of the purpose of the research, the procedures involved, their right to withdraw at any stage without penalty, and the measures taken to ensure confidentiality and anonymity. Written informed consent was obtained from all participants before participation. Data were anonymised, securely stored, and used solely for academic purposes in accordance with accepted ethical research principles.

8. Presentation Of Findings

8.1 Demographic data

Most respondents were aged 41–50 years (43.0%), followed by 31–40 (26.3%) and 21–30 (21.5%), with few above 50. The sample was mainly single (47.4%), with 36.4% married. Gender was nearly balanced (50.9% male, 47.8% female). Most held degrees (47.4%), followed by diplomas (21.1%) and certificates (17.5%). Work experience was generally short, with 30.7% under one year and 32.9% between 1–5 years. Nurses dominated the sample (54.4%), followed by midwives (23.7%) and doctors (21.9%).

8.2 Thematic Analysis of Qualitative Findings

The qualitative findings are summarised in the tables below which presents the major themes, sub-themes, and key insights derived from the interviews.

Theme: Nature and Focus of the Current Total Reward Systems

Table 1: Summary of Themes, Sub-themes, and Key Findings

Sub-theme	Key Findings	Illustrative Verbatim Quotation
Predominant Emphasis on Extrinsic Rewards	Salaries and allowances dominate the reward system; however, they are perceived as insufficient, uncompetitive, and ineffective in motivating long-term retention. Salary progression is slow and largely dependent on promotion, leading to frustration and perceived inequity.	<i>"Our salaries may attract people initially, but they are not enough to keep experienced staff. Unless you get promoted, your salary hardly changes."</i> (Participant 4, Nurse)
Limited Integration of Intrinsic Rewards	Recognition mechanisms are largely absent, career development opportunities are limited, and bureaucratic constraints reduce autonomy, resulting in low job satisfaction and weak organisational commitment.	<i>"We work hard, but recognition is rare. There are very few opportunities for further training or promotion, and decisions are made without involving us."</i> (Participant 7, Medical Officer)
Weak Social Reward Structures	Teamwork, mentorship, and supportive supervision are minimal or informal, contributing to professional isolation, weak collaboration, and a reduced sense of belonging, particularly in rural facilities.	<i>"In rural clinics you often feel like you're working alone. There is very little mentoring or support from supervisors, which makes many people leave."</i> (Participant 2, Midwife)

Note: Participant numbers are pseudonyms used to preserve anonymity.

8.2.1 Weaknesses of the Current Total Reward System

The weaknesses identified from the qualitative data are presented in Table 3.

Table 2: Weaknesses of the Current Total Reward System

Sub-theme	Key Findings	Illustrative Verbatim Quotation
Lack of Differentiation and Performance Link	Uniform reward structures fail to recognise high performance, reducing motivation and increasing turnover intentions.	<i>"Whether you work harder or not, everyone is rewarded the same. After a while, you stop putting in extra effort because it makes no difference."</i> (Participant 5, Nurse)
Outdated Reward Systems and Rigid Structures	Standardised salary scales limit flexibility and fail to reflect differences in roles and responsibilities.	<i>"The salary structure is outdated. Someone handling a heavier workload earns almost the same as someone with fewer responsibilities."</i> (Participant 8, Medical Officer)
Misalignment of Workload and Reward	Rewards are not aligned with workload or job complexity, leading to perceptions of unfairness.	<i>"We work long hours, often without enough staff, yet our compensation does not reflect the amount or complexity of the work we do."</i> (Participant 3, Nurse)
Lack of Career Progression	Delayed promotions and unclear advancement pathways create	<i>"Many of us have waited years for promotion. There is no clear pathway, so people lose</i>

	stagnation and reduce commitment.	<i>hope and start looking elsewhere."</i> (Participant 9, Midwife)
Poor Recognition and Motivation	Lack of structured recognition undermines morale and engagement.	<i>"Even when you perform exceptionally well, nobody acknowledges your effort. A simple appreciation would motivate many of us."</i> (Participant 6, Nurse)
Insufficient Rural Incentives	Inadequate hardship allowances discourage deployment and retention in rural areas.	<i>"Working in rural areas is difficult, but the hardship allowance does not compensate for the challenges. Many staff request transfers as soon as possible."</i> (Participant 2, Medical Officer)
Inflexible Work Arrangements	Rigid schedules limit work-life balance and contribute to dissatisfaction and turnover.	<i>"The work schedules are inflexible. It becomes difficult to balance family responsibilities, and many colleagues leave because of that."</i> (Participant 10, Nurse Manager)

These findings reveal demonstrate systemic weaknesses in the reward structure, particularly in terms of fairness, flexibility, and responsiveness to employee needs.

8.2.2 Challenges Hindering Reward System Development

The major structural and institutional challenges are summarised in Table 3.

Table 3: Challenges Hindering Reward System Development

Sub-theme	Key Findings	Illustrative Verbatim Quotation
Centralised HR and Bureaucracy	Centralised decision-making delays recruitment, promotions, and reward adjustments, reducing organisational responsiveness.	<i>"Almost every decision has to go through headquarters. By the time approval comes, we have already lost staff or the situation has changed."</i> (Participant 3, District Health Manager)
Budget Constraints and Underfunding	Limited financial resources restrict the implementation of competitive and innovative reward strategies, making it difficult to attract and retain skilled healthcare professionals.	<i>"Even when managers identify good ways to motivate staff, there is simply no budget to implement them. Everything depends on limited funding."</i> (Participant 7, Hospital Administrator)
Lack of Local Autonomy	District-level managers have limited authority to tailor reward practices to local circumstances, reducing the effectiveness of workforce management.	<i>"We understand the needs of our staff, but we cannot make decisions locally. Everything has to be approved centrally, leaving us with very little flexibility."</i> (Participant 5, District Medical Officer)

8.2.3 Relationships Between Rewards and Attraction and Retention

The perceived relationships between reward components and employee outcomes are presented in Table 4.

Table 4: Relationships Between Employee Rewards and Attraction and Retention

Sub-theme	Key Findings	Illustrative Verbatim Quotation
Competitiveness of Rewards and Attraction	Extrinsic rewards attract employees initially, but a lack of competitive salaries and benefits reduces long-term retention.	<i>"The salary package encouraged me to join the public health sector, but after gaining experience I realised the private sector offers much better pay. That is why many of us eventually leave."</i> (Participant 4, Medical Officer)
Intrinsic Motivation and Retention	Recognition, meaningful work, and career development opportunities are essential for sustaining long-term employee retention.	<i>"What keeps me here is not only the salary. Feeling appreciated, having opportunities to learn, and knowing my work has an impact are what make me want to stay."</i>

		(Participant 8, Nurse)
Work Environment and Social Support	Teamwork, supportive leadership, and positive workplace relationships strengthen employee retention, whereas poor supervision contributes to dissatisfaction and turnover.	"A supportive supervisor makes a huge difference. When management listens and colleagues work together, people are much less likely to leave." (Participant 2, Midwife)
Turnover Pressures and Risks	Heavy workloads, staff shortages, limited resources, and attractive external employment opportunities contribute significantly to employee attrition.	"We are expected to do more with fewer staff every year. Combined with better opportunities abroad and in private hospitals, it becomes difficult to justify staying." (Participant 6, Nurse Manager)

The findings suggest that while extrinsic rewards are important for attraction, intrinsic and social rewards play a critical role in sustaining retention.

9.1 Correlation Analysis

The findings revealed that all variables were positively and significantly correlated at the 0.01 level, indicating strong and reliable associations between reward systems and employee outcomes.

9.2 Correlation Matrix

Table 5: Pearson correlation for relationship between extrinsic rewards, intrinsic rewards, social rewards, employee attraction, and employee retention.

Correlations		Employee attraction	Extrinsic rewards	Intrinsic rewards	Social rewards	Employee retention	Organisational commitment
Employee attraction	Pearson Correlation	1	.613**	.584**	.441**	.661**	.620**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	228	228	228	228	228	228
Extrinsic rewards	Pearson Correlation	.613**	1	.740**	.529**	.804**	.672**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	228	228	228	228	228	228
Intrinsic rewards	Pearson Correlation	.584**	.740**	1	.544**	.807**	.781**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	228	228	228	228	228	228
Social rewards	Pearson Correlation	.441**	.529**	.544**	1	.583**	.688**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	228	228	228	228	228	228
Employee retention	Pearson Correlation	.661**	.804**	.807**	.583**	1	.661**
	Sig. (2-tailed)	.000	.000	.000	.000		.000

	tailed)						
	N	228	228	228	228	228	228
Organisation al commitment	Pearson Correlatio n	.620**	.672**	.781**	.688**	.628**	1
	Sig. (2- tailed)	.000	.000	.000	.000	.000	
	N	228	228	228	228	228	228
**. Correlation is significant at the 0.01 level (2-tailed).							

The results in Table 6 indicate that all reward dimensions were positively and significantly related to employee attraction and retention. Extrinsic rewards showed a strong positive relationship with employee attraction ($r = 0.613$, $p < 0.001$) and a very strong relationship with employee retention ($r = 0.804$, $p < 0.001$). This indicates that salaries, allowances and financial benefits are important in attracting and retaining health-care professionals. Similarly, intrinsic rewards were significantly positively related to both employee attraction ($r = 0.584$, $p < 0.001$) and employee retention ($r = 0.807$, $p < 0.001$). Non-financial factors, such as recognition, meaningful work, autonomy and career development, are important for sustaining long-term employee commitment and reducing turnover intentions. Social rewards, such as teamwork, supervision and workplace relationships were also positively associated with attraction ($r = 0.441$, $p < 0.001$) and retention ($r = 0.583$, $p < 0.001$). However, the relationships were weaker in comparison. A robust positive relationship was also found between employee attraction and employee retention ($r = 0.661$, $p < 0.001$).

Regarding hypothesis 4, the results indicated a positive and significant relationship between organisational commitment and employee attraction ($r = 0.620$, $p < 0.001$). This suggests that when organisational members identify with and trust their organisation, they find it more attractive and desirable to work for. The results support the Social Exchange Theory, which suggests that employees are more attracted to organisations that they perceive as supportive and fair. Hypothesis 5: Organisational commitment has a strong positive relationship with employee retention ($r = 0.628$, $p < 0.001$).

9.3 Reliability Results Analysis

The reliability analysis for the Extrinsic Rewards construct produced a Cronbach's Alpha coefficient of 0.842 across 10 items, indicating good internal consistency. Cronbach's alpha values above 0.70 demonstrate acceptable reliability. This value meets the minimum acceptable threshold for internal consistency in social science research (Repke & Birkenmaier, 2024).

Table 6: Reliability Results Analysis Extrinsic Rewards

Reliability Statistics	
Cronbach's Alpha	N of Items
.842	10

The Intrinsic Rewards construct achieved a Cronbach's Alpha of 0.881 based on 11 items, demonstrating excellent internal consistency. This coefficient exceeds the recommended threshold of 0.70 and suggests that the questionnaire items reliably measure intrinsic aspects such as recognition, achievement, autonomy, career development, and meaningful work.

Table 7: Reliability Results Analysis Intrinsic Rewards

Reliability Statistics	
Cronbach's Alpha	N of Items
.881	11

The Social Rewards scale yielded a Cronbach's Alpha coefficient of 0.796 across 8 items, indicating acceptable to good reliability. Although slightly lower than the other constructs, the coefficient remains above the minimum acceptable threshold of 0.70, confirming satisfactory internal consistency (Hair et al., 2022).

Table 8: Reliability Results Analysis Social Rewards

Reliability Statistics	
Cronbach's Alpha	N of Items
.796	8

The Organisational Commitment construct recorded a Cronbach's Alpha of 0.854 based on 10 items, indicating good internal consistency. This coefficient demonstrates that the items used to measure employees' psychological attachment, loyalty, and commitment to the organisation are highly consistent and reliable. The reliability of this scale provides confidence that organisational commitment was measured accurately and can be used as a valid construct in examining its mediating role within the conceptual framework.

Table 9: Reliability Results Analysis Organisational Commitment

Reliability Statistics	
Cronbach's Alpha	N of Items
.854	10

Table 10: Reliability Results Analysis Employee Attraction

Reliability Statistics	
Cronbach's Alpha	N of Items
.813	10

Table 11: Reliability Results Analysis Employee Retention

Reliability Statistics	
Cronbach's Alpha	N of Items
.887	10

9.8 Regression analysis

9.8.1 Multiple regression model summary for employee attraction

Table 12: Multiple regression model summary for employee attraction

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.649 ^a	.421	.413	2.823	1.951
a. Predictors: (Constant), Social rewards, Extrinsic rewards, Intrinsic rewards					
b. Dependent Variable: Employee attraction					

From Table 12, the predictors accounted for 42.1% of the variance in employee attraction ($R^2 = .421$). The adjusted R^2 is .413, indicating a reasonably good model fit. The correlation coefficient ($R = .649$) indicates a moderately strong positive correlation between the reward types and employee attraction (Chicco et al., 2021). The Durbin–Watson statistic (1.951) is within acceptable limits. The ANOVA test compares the explained variance (the regression sum of squares) to the unexplained variance (the residual sum of squares) to see if the regression model significantly predicts the dependent variable.

9.8.2 ANOVA for multiple regression for employee attraction

Table 13: ANOVA for multiple regression for employee attraction

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1298.002	3	432.667	54.289	.000 ^b
	Residual	1785.208	224	7.970		
	Total	3083.211	227			
a. Dependent Variable: Employee attraction						
b. Predictors: (Constant), Social rewards, Extrinsic rewards, Intrinsic rewards						

Table 12 summarises the results of the regression model and shows that the model was statistically significant, $F(3, 224) = 54.289$, $p < .001$, indicating that extrinsic, intrinsic and social rewards together significantly predict employee attraction. The regression sum of squares (1298.002) was significantly greater than the residual sum of squares (1785.208) indicating that a large percentage of the variance in employee attraction was explained by the model (Keith, 2019). This confirms that predictors have a significant joint effect on employee attraction. Table 12 contains unstandardised coefficients (B), standardised coefficients (Beta), t-values, significance levels (p-values), and collinearity statistics (Tolerance and VIF).

9.8.3 Multiple regression coefficients for employee attraction

Table 14: Multiple regression coefficients for employee attraction

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.158	1.366		.848	.397		
	Extrinsic rewards	.266	.056	.370	4.765	.000	.429	2.329
	Intrinsic rewards	.149	.047	.251	3.197	.002	.419	2.384
	Social rewards	.147	.084	.109	1.747	.082	.669	1.496
a. Dependent Variable: Employee attraction								

Table 14 shows that extrinsic rewards ($\beta = .370$, $p < .001$) and intrinsic rewards ($\beta = .251$, $p = .002$) were significant positive predictors of employee attraction. This means that financial rewards and internal motivators are both important in attracting employees. Social rewards ($\beta = .109$, $p = .082$) were not statistically significant (Chicco, Warrens & Jurman, 2021). The multicollinearity was not an issue as shown by the collinearity diagnostics ($VIF < 2.5$) confirming the stability of the model.

9.9 Regression results for employee retention

Multiple regression model summary for employee retention

Table 15: Multiple regression model summary for employee retention

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.870 ^a	.757	.753	5.234	2.055
a. Predictors: (Constant), Social rewards, Extrinsic rewards, Intrinsic rewards					
b. Dependent Variable: Employee retention					

The R^2 of 0.757 indicates that the joint effect of these predictors' accounts for 75.7% of the variability in employee retention. The adjusted R^2 value shows that the model remains robust after adjusting for the number of predictors (Tatachar, 2021). The Durbin-Watson statistic (2.055) is within the acceptable range of 1.5 to 2.5. This shows that there is no significant autocorrelation in the residuals and the assumption of independent errors is met. Table 16 shows the ANOVA results of the multiple linear regression model of the combined predictive power of extrinsic rewards, intrinsic rewards and social rewards on employee retention.

9.9.1 Regression ANOVA for multiple regression for employee retention

Table 16: Regression ANOVA for multiple regression for employee retention

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	19084.568	3	6361.523	232.195	.000 ^b
	Residual	6136.993	224	27.397		
	Total	25221.561	227			
a. Dependent Variable: Employee retention						
b. Predictors: (Constant), Social rewards, Extrinsic rewards, Intrinsic rewards						

The ANOVA results show that the overall multiple regression model was statistically significant, ($F(3, 224) = 232.20, p < .001$). This indicates that extrinsic rewards, intrinsic rewards, and social rewards collectively provide a significant prediction of employee retention in the public health sector.

9.9.2 Multiple regression coefficients for employee retention

Table 17: Multiple regression coefficients for employee retention

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std.	Beta			Tolerance	VIF
1	(Constant)	7.073	2.532		2.793	.006		
	Extrinsic rewards	.867	.103	.421	8.380	.000	.429	2.329
	Intrinsic rewards	.721	.086	.425	8.345	.000	.419	2.384
	Social rewards	.500	.156	.129	3.197	.002	.669	1.496
a. Dependent Variable: Employee retention								

The results indicate that all three predictors, extrinsic rewards, intrinsic rewards, and social rewards, were statistically significant positive predictors of employee retention. Extrinsic rewards ($B = 0.867, p < .001$) and intrinsic rewards ($B = 0.721, p < .001$) emerged as the strongest predictors. Social rewards also had a significant but smaller effect ($B = 0.500, p = .002$). Collinearity statistics (tolerance $> .40$ and $VIF < 2.5$) confirm that multicollinearity is not a concern in this model.

9.10 Multiple regression model summary for employee attraction

Table 18: Model Summary for Organisational Commitment and Employee Attraction

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.620 ^a	.384	.381	3.014	1.927
a. Predictors: (Constant), Organisational commitment					
b. Dependent Variable: Employee attraction					

9.10.1 ANOVA for Organisational Commitment and Employee Attraction

Table 19: ANOVA for Organisational Commitment and Employee Attraction

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1184.945	1	1184.945	141.206	.000 ^b
	Residual	1898.266	226	8.400		
	Total	3083.211	227			
a. Dependent Variable: Employee attraction						
b. Predictors: (Constant), Organisational commitment						

9.10.2 Multiple regression coefficients for Organisational Commitment and Employee Attraction

Table 20: Multiple regression coefficients for Organisational Commitment and Employee Attraction

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.143	1.162		5.287	.000
	Organisational commitment	.587	.049	.620	11.883	.000

The regression analysis showed that organisational commitment significantly predicted employee attraction ($R = .620$, $R^2 = .384$, $F(1, 226) = 141.206$, $p < .001$). Organisational commitment explained 38.4% of the variation in employee attraction. The regression coefficient was positive and statistically significant ($\beta = .620$, $B = .587$, $t = 11.883$, $p < .001$), indicating that higher levels of organisational commitment were associated with higher levels of employee attraction. Therefore, Hypothesis 4 was supported.

9.11 Multiple regression model summary for Organisational Commitment and Employee Retention

Table 21: Model Summary for Organisational Commitment and Employee Retention

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.628 ^a	.394	.391	2.856	1.968
a. Predictors: (Constant), Organisational commitment					
b. Dependent Variable: Employee retention					

9.11.1 ANOVA for Organisational Commitment and Employee Retention

Table 22: ANOVA for Organisational Commitment and Employee Retention

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1208.617	1	1208.617	147.942	.000 ^b
	Residual	1846.901	226	8.172		
	Total	3055.518	227			
a. Dependent Variable: Employee retention						
b. Predictors: (Constant), Organisational commitment						

9.11.2 Multiple regression coefficients for Organisational Commitment and Employee Retention

Table 23: Multiple regression coefficients for Organisational Commitment and Employee Retention

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.864	1.098		5.340	.000
	Organisational commitment	.612	.050	.628	12.163	.000

The regression analysis indicated that organisational commitment significantly predicted employee retention ($R = .628$, $R^2 = .394$, $F(1, 226) = 147.942$, $p < .001$). Organisational commitment accounted for 39.4% of the variance in employee retention. The regression coefficient was positive and statistically significant ($\beta = .628$, $B = .612$, $t = 12.163$, $p < .001$), demonstrating that employees with higher organisational commitment were more likely to remain with the organisation. Accordingly, Hypothesis 5 was supported.

10. Discussion of Findings

The current total reward system of Botswana's public health sector is heavily weighted towards extrinsic rewards (Tatachar, 2021). The majority of the research participants prefer extrinsic rewards like salaries and allowances. However, these rewards are considered inadequate, uncompetitive and ineffective for the maintenance of long-term retention. The finding is consistent with Dirwan's et al. (2024) findings that indicate that when financial rewards are critical for attracting employees, they may not be sufficient alone to ensure their retention. The limited integration of intrinsic rewards as observed in the findings especially the lack of recognition, career development and professional autonomy are observed to strongly reinforce the importance of motivator factors in sustaining employee commitments. The regression analysis indicates that intrinsic rewards are a strong and statistically significant predictor for employee retention ($\beta = 0.425$, $p < 0.001$).

The findings complemented the traditional interpretation of Herzberg's two-factor theory by demonstrating the importance of relational and social aspects of work (Peramatzis & Galanakis, 2022). The literature reviewed affirms that organisational culture and leadership support at the workplace are important in enhancing employee commitment and, therefore, retention (Barros & Pereira, 2022). The results also showed a moderate statistically significant correlation between social rewards, both are tracking and retaining (Ahmad et al., 2023). The very strong positive relationships between intrinsic rewards ($r = 0.807$) and extrinsic rewards ($r = 0.804$) with employee retention confirm that both dimensions are critical determinants of retention. This finding is consistent with Dirwan et al. (2024) who argue that extrinsic reward attracts employees, but intrinsic reward is more effective in retaining them. In the context of employee attraction, the strongest predictor was extrinsic rewards ($\beta = 0.370$), followed by intrinsic rewards ($\beta = 0.251$), and social rewards were not statistically significant. This shows that the first attraction is largely financial. This is affirmed by Widodo & Damayanti (2020) that pay is a major factor in job choice. However, in the case of employee retention all three components of rewards were significant predictors with the strongest effects for intrinsic and extrinsic rewards.

11. Limitations of the Study

The study was confined to the public health sector in Botswana, limiting the generalisability of the findings to other sectors, but might also serves as an important indicator to other departments in the public sector of the same size and structure.

12. Practical and Managerial Implications

Managers should prioritise the development of structured recognition programmes, career development pathways, and supportive work environments to enhance employee commitment.

13. Contributions, Conclusion and Recommendations

13.1 Contributions Of The Study

The current study adds to the existing total reward literature by providing empirical evidence from the public health sector of Botswana. The public health sector of Botswana has been under researched despite the continued challenges to attract and retain healthcare professionals. This study adds to the existing research by investigating the combined effect of extrinsic, intrinsic and social rewards, which have been studied mostly in isolation. We find extrinsic rewards are the strongest predictors of employee attraction while intrinsic rewards, supported by social rewards, play a greater role in employee retention. While organisational commitment was positively associated with attraction and retention, mediation was not

formally tested in the study and so the mediating role of organisational commitment remains a theoretical proposition to be confirmed through future mediation analyses.

The study has practical implications for policy makers and managers. The qualitative findings indicate a need for a more balanced total reward strategy which includes competitive financial rewards combined with recognition, career development, supportive leadership and positive working relationships. The participants cited the absence of rural hardship allowances, lack of promotion opportunities, rigid reward structures and lack of recognition as the main reasons for employee turnover. Therefore, policy makers need to enhance rural incentive packages, establish transparent career paths and performance-based reward systems, and promote flexible work arrangements and supportive supervision. These would improve organisational commitment, workforce stability and retention of healthcare professionals in the public health sector in Botswana.

13.2 Conclusions

The findings of this study demonstrate that total reward systems play a significant role in influencing employee attraction and retention within Botswana's public health sector. The quantitative analysis showed that extrinsic rewards were the strongest predictor of employee attraction, while intrinsic rewards emerged as the strongest predictor of employee retention, with social rewards making a smaller but statistically significant contribution to retention. The qualitative findings further revealed that employees perceive the current reward system as overly dependent on financial incentives, with insufficient emphasis on recognition, career development, supportive leadership, and flexible work arrangements. Furthermore, organisational commitment was positively associated with both employee attraction and employee retention, suggesting that it is an important mechanism linking reward systems to workforce outcomes. However, because this study did not undertake a formal mediation analysis, the mediating role of organisational commitment should be interpreted as a theoretical proposition supported by positive associations rather than as a statistically confirmed mediation effect.

13.3 Recommendations for Future Research

Future studies should incorporate more variables such as leadership style, organisational culture and job satisfaction for a more comprehensive understanding. Finally, further qualitative research is required to investigate the contextual factors that affect the effectiveness of reward systems.

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Competing interests

The authors have declared that no competing interest exists.

Authors' contributions

K.A worked on the conceptualisation, carried out the literature review and data collection for the first draft of the article. M.N.N determine appropriateness of the methodology design and refinement of the first draft and data analysis and technical issues.

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Data availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Disclaimer

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