



Research article

Contributions of placement, retraining and motivation to teachers' job commitment: structural equation modelling of the linkages



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HIGHLIGHTS

- The issue of employee job commitment and turnover is pervasive.
- Teacher shortages have made it more challenging to fill vacancies.
- Confirmatory factor analysis uncovered several linkages among latent variables.
- Staff retraining is essential in promoting a committed workforce.
- Placement has a significant contribution to continuance commitment.

ARTICLE INFO

Keywords:

CFA
Commitment
EFA
Factor analysis
Latent variable
Prediction

ABSTRACT

This study used a latent variable structural equation modelling to quantify how staff motivation, placement and retraining partially and grossly affect teachers' job commitment across three areas. The research was quantitative, and the design adopted was the ex-post facto. This study included 500 school managers from 204 public secondary schools in Cross River State, Nigeria. Data were gathered using the "staff placement, retraining and motivation questionnaire" (SPRMQ) and the "job commitment questionnaire (JCQ)." Both instruments were assessed for face and content validity using domain and psychometric experts. The instruments' construct validity was determined using exploratory and confirmatory factor analyses based on the Maximum Likelihood (ML) estimation technique. Acceptable indices were obtained for the test of sampling adequacy and Bartlett's test of sphericity. Loadings of items for each latent factor in the study varied from .55 to .98. The reliability for internal consistency was also established using Cronbach's alpha with coefficients ranging from .93 to .97. Our findings indicate that retraining is an essential predictor of staff affective commitment (AC), normative commitment (NC) and continuance commitment (CC). However, placement and motivation did not significantly contribute to employees' job commitment across the AC, CC, and NC aspects. Cumulatively, the three upstream variables explained less than 15% of the variance in the three dimensions of job commitment, respectively. Based on these results, discussions were made with implications for research, theory, and practice.

1. Introduction

Secondary education is primarily saddled with shaping students' behaviour and preparing them for productive lives. Every educational system relies on instructors to guarantee the realisation of stated objectives (Owan and Agunwa, 2019). Teachers must be highly committed to their jobs to succeed in service delivery. Given the extraordinary

responsibilities of teachers, it is rather regrettable that a constant stream of evidence keeps revealing that most instructors have negative views and undesirable attitudes to work. This ineffectiveness, often reported in studies, includes tardiness, conflict with school administrators, the unexpected drafting of lecture notes, poor record-keeping, refusal to teach and unsatisfactory work mentalities (Arop et al., 2018; Demirok, 2018; Owan, 2021).

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Besides the issue of ineffectiveness, many teachers do not appear committed to their jobs. A national survey conducted in the United States of America revealed that teacher turnover is 50 per cent greater in Title I schools, where most low-income students attend (Carver-Thomas and Darling-Hammond, 2017). The report also revealed that teachers working in schools with a high degree of minority students experienced 70% higher job turnover rates. Furthermore, the report indicated that teachers are more likely to quit their jobs in mathematics, science, English language and foreign languages. A mounting body of research indicates that less successful instructors are more likely to resign than their more effective colleagues (Feng and Sass, 2017; Goldhaber et al., 2010; Papay et al., 2017).

In different parts of Asia, research attention has also been drawn to the issue of staff intention to quit their jobs (Ail et al., 2015; Alhmoud and Rjoub, 2020; Grillo and Kier, 2021; Khawary and Ali, 2015; Mărgăritoiu, 2015; Zhang et al., 2019). In the context of Africa, particularly in Nigeria, an increasing number of studies on the education sector reveal a high rate of teachers' job turnover, commitment problems, and low retention rates (Ajayi and Olatunji, 2019; Kamau et al., 2021; Madigan and Kim, 2021; Mutune and Orodho, 2014; Owan, 2021; Toprak et al., 2019). This provides an account that the issue of teachers' job commitment, hypocrisy, turnover, and retention is a global phenomenon. This is worrisome, especially for developing nations such as Nigeria, where there is a high unemployment rate. Besides, voluntary retirement or attrition is not healthy for both the teachers and the nation due to shortages.

Teacher shortages have made it more challenging to fill vacancies with competent instructors. Reducing teacher churn, or the transfer of teachers from one school or profession to another, may help alleviate teacher shortages. However, a study has shown that one in three teachers quit their positions for reasons other than retirement, creating a need for new teachers in the United States around 90 per cent of the year (James and Wyckoff, 2020). To alleviate teacher shortages, educational systems need to address the issues that lead to high turnover. Many past policies and studies portray teacher retention as clearly helpful (Carver-Thomas and Darling-Hammond, 2019). This position may not be accurate if rigorous and reliable measurements of teacher performance are lacking given the evidence that teacher turnover is harmful to learners (James and Wyckoff, 2020) and damaging to secondary school objectives (Omorobi et al., 2020; Owan et al., 2019). However, the compositional impact of teacher turnover is still unknown since it relies on the various impacts of outgoing and incoming instructors. Research on teachers' recruitment has often raised questions about identifying candidates with the potential to become good teachers because administrators are more concerned about retaining effective teachers (e.g., Cohen et al., 2020; Grissom and Bartanen, 2019; Jacob et al., 2018).

Several work-related driving impulses, such as inconsistent promotion and late payment of salary and other dues, might explain instructors' seeming lack of dedication (Owan, 2018). Because of this, many teachers are dissatisfied with their jobs and have unfavourable attitudes (Udoifia and Ikpe, 2012). Teacher turnover also impacts policy discussions about teacher training, school funding, student performance, transparency, and school leadership (James and Wyckoff, 2020). A feeling of urgency has prompted policymakers to accept a wide range of measures to reduce teacher turnover because of its impact. Since job commitment is defined as the extent to which workers are prepared to stay loyal to their employer due to their happiness, satisfaction or compensation (Owan, 2021), it is crucial to identify the factors that contribute to employee job commitment in developing countries. The present study drew from these issues and was designed to predict teachers' job commitment (across AC, CC and NC dimensions) based on their retraining, motivation and placement.

2. Review of related literature and theoretical framework

2.1. Staff placement and job commitment

Staff placement activities are used to screen, interview, and recommend competent personnel who can do specific tasks based on their

expertise, proficiency, or experience. According to previous studies, appropriately allocated instructors in teaching activities had firmer grounding, a better professional coordinated effort, and improved student outcomes (Ronfeldt, 2015). Researchers found a correlation between female instructors' placement and their enthusiasm toward teaching and students' academic achievement (Okoroji and Anyanwu, 2013). The researchers believed that having more female teachers in the classroom lowers the school's income, which has an adverse effect on students' grades.

Researchers found that factors such as deployment and scheduling had a substantial influence on teachers' productivity in a survey of 204 teachers from 32 high schools (Aja-Okorie, 2016). A study investigated principals' administrative techniques for enhancing teachers' work performance (Ezeugbor et al., 2018). Given that principals are responsible for staff placement during job allocation, Ezeugbor and colleagues' findings do not picture how placement was recorded. Exploratory research of 50 respondents found no link between school administration and freshly acquired human resource management knowledge and skills (Hashmi, 2014).

This finding contrasts with another study which discovered that teachers' work placement positively influenced their employment outcomes (Sari & Sa'adah, 2019). Similarly, it has been argued that employee commitment positively impacts workers' task performance but not their overall quality of work (Khaerudin et al., 2018). This implies that a hard-working person may not do well on the job and vice versa. According to the findings of a study, some school administrators assigned teachers to classes in which they have no practical expertise (Hashmi, 2014). As a result, the incorrect placement of instructors may impact their job motivation and inclination to stay with the organisation.

2.2. Staff retraining and job commitment

Educators that undergo retraining get the skills, knowledge, and abilities necessary to effectively deliver lessons and to get the most out of their learners (Agunwa et al., 2019). Through capacity development, employees should be able to broaden their knowledge, experience, and capacities (Cobblah, 2015). Through lectures, conferences, talks, meetings, workshops, and other ways, educators may be retrained to understand the public's requirements and provide better service (Owan, 2018). The study of Cobblah (2015), using a mixed-method approach, discovered that employees' training and development activities at Ghanaian institutions resulted in library staff being more competent in providing services to the student population. Another study found a correlation between teachers' engagement in in-service training (such as seminars and workshops) and their students' performance in social studies at the secondary level (Essien et al., 2016).

Teacher participants in a professional development course saw it as suitable and desirable from various viewpoints (Romina, 2016). It was concluded that the level of preparation impacted educators' capacity to teach effectively. According to Gunu et al. (2013), organisational performance significantly correlated with all the predictors, accounting for 39.1% of the variation in formal organisation efficiency. Three factors were identified as significant in the coefficient table: businesses' contribution to growth, frequency in which employees are educated, and monetary incentives for high performance.

Ocen et al. (2017) found a high positive association between training and employee dedication, satisfaction, and commitment. According to the study, exogenous factors explained 29.7% of the variance in employee commitment. Because work commitment was considered broadly, the referenced researchers advised that future studies investigate the role of retraining in the three dimensions of career commitment. Aboyassin and Sultan (2017) found that retraining improved service quality, profitability, and job satisfaction (all indicators of workers' success) in the manufacturing industry. Staff training and development were shown to influence workers' success based on data collected from 50 high-profile personnel (Degraft, 2012). A study analysed frequency-based data using

the Chi-square test and found a clear correlation between an organisation's in-service training and the long-term requirements of its employees (Tukunimulongo, 2016).

Based on the "Social Exchange Theory", another study found that employees' willingness to learn and their views of training benefits are strongly related to their organisations' commitment (Bartlett, 2001). Additionally, the cited study revealed that the link between workers' emotional desire to remain and their ability to access high-quality educational opportunities was moderated by their level of job satisfaction. Some studies have also found a substantial nexus between training and employee loyalty in schools (Mackenzie and Nwafor, 2019; Naong, 2016). However, these studies treated organisational commitment broadly, even when it has been theorised that job commitment has three dimensions (Allen & Meyer, 1990). The generic nature most previous studies make them shallow in the information they provide. Consequently, it remains unclear the connection that exist between predictor variables (such as placement) and staff job commitment across the three dimensions.

2.3. Staff motivation and job commitment

Motivation is essential in any business since it boosts productivity among employees and increases the possibility that targets will be met quickly and effectively (Owan et al., 2018). In the corporate and governmental sectors, employee motivation is becoming widely accepted as a necessary precondition for the long-term viability of any business (Uso, 2011). Teachers' motivation is directly related to how school administrators use different tactics and procedures to entice teachers to participate in instructional processes (Owan, 2021). Thus, the use of important driving variables by school administrators to assist instructors to become capable and effective in their roles as educators is conceived as motivation in the present study.

Instructors' motivation and work dedication or efficacy have received much attention from empirical research. Its wide-ranging interest across various cultural views is vital for its value in the workplace. An empirical study showed that management in the banking industry might use numerous methods and tactics to motivate their employees (Owusu, 2012). The research also found that removing financial incentives from the workplace would significantly impact how motivated employees were to carry out their allotted duties. Similarly, Uso (2011) discovered that job stability, promotion, communication and involvement in decision-making influenced teachers' efficiency. Nevertheless, there was no explanation for why these characteristics were vital indicators of the response variable. Research has shown that work satisfaction served as a mediator between instructors' motivation and the success of their institutions (Ali et al., 2016). Another study found that training and instructional staff research experiences influenced employee motivation and performance by over 70% (Kwapon et al., 2015).

Teachers' productivity in secondary schools was strongly influenced by the engagement pattern used by administrators, according to a descriptive study (Aja-Okorie and Usulor, 2016). According to the survey, public and private high schools administrators failed to protect teachers adequately. Some employees' working circumstances were unfavourable at an exhibition, resulting in unwelcome behaviour on their part (Nairuba, 2004). A second finding of the survey was that wages and pay scales had little effect on the efficiency of teachers and that 70.9% of respondents stated that random rewards (like salary raises and lauds) were still reliant on the availability of cash and the board's acknowledgement.

2.4. Theoretical framework

This research derives theoretical roots from the "three-component theory" (Allen and Meyer, 1990). The theory states that employees' commitment may be appropriately quantified in a threefold structure across the AC, NC and CC dimensions. The AC refers to a staff member's

desire to work for a company because of their enthusiasm for what they do and how it makes them feel fulfilled (Owan et al., 2020). Although these links may not be directly tied to the compensation workers get for their contributions, they are based on their excitement and pleasure for their work and organisation.

The CC refers to employees' willingness to stay in an organisation because of the perceived risks or hardships that might follow quitting (Owan et al., 2020). This form of commitment is based on the rewards or pay workers get from organisations that make it seem unattainable or difficult to acquire anything better elsewhere (Owan, 2021). Consequently, the most reasonable course of action is to remain focused on the available workplaces. This commitment seems more temporary than affective commitment since individuals may quit an organisation if a high salary offer arrives from somewhere else.

The NC is the tendency of employees to remain in an organisation based on pre-established norms tying the organisation and the individual (Peretomode and Bello, 2018). Due to the contractual provisions, employees feel obligated to their employers (Owan et al., 2020). Consequently, workers have no option except to accept the situation and stick around for the duration of their contract (no matter how much they want to leave). In the current study, we followed the three-component theory of work commitment to analyse in detail, all the elements of job commitment rather than examining it holistically. Additionally, the theory has ramifications for current research since it explains why most employees remain or leave an organisation. Therefore, this research was intended to examine three of these work commitment qualities in connection to three upstream variables (staff placement, motivation and retraining). The objective is to ascertain the exogenous variables' partial and combined impacts on the response variable across the three dimensions. Based on this objective, the following research questions were framed:

1. How much does placement cause variation in instructors' AC, CC, and NC in secondary schools?
2. To what extent does retraining predict instructors' commitment across the three domains in secondary schools?
3. How much does staff motivation predict teachers' commitment across the three aspects in secondary schools?
4. What composite prediction has staff motivation, placement and retraining on teachers' commitment (in terms of AC, CC, and NC) in secondary schools?

2.5. The current research

This research has uncovered a wealth of original insights as it combed through related literature in all its parts. Few studies have tried to link employee work commitment to staff placement as a people management function. This suggests that a wide range of studies are possible in this domain to unearth previously undisclosed truths. The present study assessed the association between work commitment and placement among secondary school teachers to fill this vacuum in the literature.

Staff retraining and employee engagement have been extensively researched, with most studies finding a substantial correlation between job performance and instructors' retraining (e.g., Aboyassin and Sultan, 2017; Cobblah, 2015; Romina, 2016; Tukunimulongo, 2016). Different studies have linked instructors' retraining to student academic success (Essien et al., 2016). It is rare to find research that relates retraining to commitment as a three-fold, especially in the Nigerian context. Other studies have used the phrase "job commitment" synonymously with teachers' effectiveness or efficacy. However, researchers argue that teaching efficacy and work commitment are not the same and should be evaluated separately. A successful teacher can be non-committed, making both terms different. When it comes to being effective, it is all about doing the right thing at the right moment (Owan, 2021). Regarding employee turnover, job commitment focuses more on the individual's desire to remain with the organisation. According to the Allen and Meyer

(1990) model of work commitment, even if an employee is doing everything correctly, he or she may be open to leaving the company for a more lucrative opportunity (continuance commitment). Using a three-component approach, this research seems the first to investigate the link between retraining and teachers' work commitment.

While researchers such as Aja-Okorie and Usulor (2016); Kwapong et al. (2015), and Owusu (2012) have examined the relationship between motivation and teachers' work performance or effectiveness, none have examined it in line with the three aspects of job commitments (AC, CC, NC). Few studies have examined the relationship between instructors' AC, CC and NC and the level of staff motivation. This study examined how placement, motivation and retraining affect the essential characteristics of teachers' professional commitment. A unique addition to existing knowledge is thus, made by the present study, demonstrating its value and importance.

3. Methods

3.1. Research design

This study employed a quantitative ex-post facto research strategy. According to Salkind (2010), ex post facto research is a kind of study that starts after an event has occurred, without the researcher's interference. When changing the traits of human participants is neither practical nor suitable, the ex post facto study approach is utilised. It is commonly employed to investigate cause-and-effect hypotheses or when following a proper experimental design is impracticable or unethical. The research design was considered more suitable for this study because we collected data about staff placement, retraining, motivation, and job commitment based on past occurrences or experiences. We used the information gathered to understand better the cause-effect situations for timely intervention and remediation of the problem.

3.2. Study participants

This study involved a sample of 500 school leaders (principals = 203, deputy principals = 297) drawn from a population of 667 administrators (principals = 271; deputy principals = 396). The sample was obtained through the stratified random sampling technique. Stratification was based on the two groups of respondents (principals and vice-principals). According to the three education zones available, all the secondary schools in Cross River State were first clustered. The first education zone (Zone A) has 88 public secondary schools, with a population of 88 principals and 121 vice principals. Zone B has 101 public secondary schools, with a population of 101 principals and 167 vice principals. Zone C has 82 public secondary schools, with a population of 82 principals and 108 vice principals. Within each stratum, we selected 75% (three quarters) of the total number of schools per zone.

This resulted in the enumeration of 204 public secondary schools distributed as 66, 76, and 61 across zones A, B, and C. The selection of 75% of the total number of schools ensured broad coverage of the study area to make the results generalisable. After selecting schools, the population of principals and teachers across the selected schools were 204 and 299, respectively. However, due to an ongoing war, at the time of data collection, in an area where one of the selected schools is located, we could not visit the school, reducing the sample to 203 and 297 vice principals (after excluding a principal and two vice principals in the non-participating school). The analysis of the demographic data revealed that the respondents were 83.8% males and 16.2% females. Most of the respondents (25.9%) were less than 40 years; 24.4% were between 40 and 44 years; 25% were between 45 and 49 years, and 24.6% were 50 years or older. Most of the respondents (27%) had a Bachelor of Education Degree (B.Ed.); 25.6% of respondents also held the first degree but from fields not related to education; 23.7% held the Post-Graduate Diploma in Education (PGDE) and Master's Degree in Education (M.Ed.) respectively. The majority of the respondents (48.6%) had over 25 years of work

experience, 25.6% had less than 15 years of work experience, and 25.8% had between 15 and 24 years of work experience.

3.3. Instruments and measures

The "Staff Placement, Retraining and Motivation Questionnaire" (SPRMQ) and the "Job Commitment Questionnaire (JCQ)" were the instruments utilised to gather data. We developed the SPMQ, which was divided into two parts. Section A gathered demographic data of respondents, whereas four-point Likert scale questions ($n = 18$ items) were used in section B to measure staff placement, retraining and motivation. Staff placement included items such as "*my school principals take staff educational qualifications into consideration when assigning duties*" and "*my school principal considers the job experience of staff before delegating responsibilities*." Sample items for staff retraining are "*my principal encourages staff members to work in teams so that new staff can learn from more experienced workers*" and "*my principal sources for guest experts to offer professional growth training in areas that staff need to improve*". Sample items for staff motivation are "*my principal quietly thanks staff for unsolicited acts of interpersonal kindness*" and "*my principal awards performance-based bonuses to staff who achieve the right results*." The three predictors were measured with six items each.

The "Job Commitment Questionnaire (JCQ)" was originally created by some academics (Owan et al., 2020). The original JCQ questions were not changed, but we only adapted items pertaining to the three aspects of employee work commitment. Three sub-scales of the questionnaire were used to score the JCQ's 24 total items. The affective dimension of the JCQ included items such as "*spending the rest of my career in this organisation is good*", "*this organisation has a great personal meaning to me*", and "*I have a strong sense of belonging with this organisation*." For the continuance aspect, sample items include "*much of my life would be disrupted if I left my organisation*", "*it would be tough to leave my organisation even if I wanted to*", and "*I might consider working elsewhere if given the privilege*." Items in the normative aspect of job commitment include statements like "*I have an obligation to the people in this organisation*", "*this organisation deserves my loyalty*", and "*working tenaciously in the organisation is of necessity for me*."

Five experts evaluated the SPMQ for face and content validity (clarity, relevance, and appropriateness of items). The experts were given separate copies of the SPMQ to analyse, ensuring that the items covered essential areas of the measured domains. Additionally, the experts verified that the statements were straightforward and free of double-barrelled wordings. The experts' advice and modifications to the initial version of the instrument helped the researchers enhance the final version utilised for data gathering. The second instrument's face and content validity, as well as factorial structure (construct validity) were previously established (see Owan et al., 2020). This research, however, used a fresh sample to validate the three sub-scales of the two instruments used for data collection.

3.4. Ethical consideration, data collection and analysis

The Nigerian Code for Health Research Ethics (NCHRE) exempts survey-based studies from ethical approval because of the lack of potential risks or dangers associated with filling out a questionnaire (see <https://bit.ly/3pK9ORh>). Before signing informed consent, the participants were fully aware of the study, its aims, and data management protocols. We also ensured there was no gender, racial or religious prejudice in the selection process and voluntary participation in the study. Respondents were informed that their responses would be aggregated and that their personal information would be omitted to preserve integrity and confidentiality. Only the lead investigator's computer could access the data since it was protected with a strong password, antivirus software, and a firewall to prevent unauthorised access. Respondents were told that their data would be analysed and that the results would be published in a journal.

Table 1. Descriptive statistics and factor loadings of items measuring staff placement, retraining and motivation, with Cronbach alpha reliability estimates.

| Items | \bar{x} | SD | SE | Skewness | Kurtosis | EFA | CFA | Cronbach α |
|-------|-----------|------|-----|----------|----------|-----|-----|-------------------|
| SP1 | 2.61 | 1.14 | .06 | -.12 | -1.40 | .92 | .94 | .97 |
| SP2 | 2.45 | 1.14 | .06 | .03 | -1.42 | .81 | .84 | |
| SP3 | 2.77 | 1.10 | .05 | -.30 | -1.26 | .98 | .98 | |
| SP4 | 2.90 | 1.11 | .06 | -.52 | -1.12 | .94 | .93 | |
| SP5 | 2.69 | 1.01 | .05 | -.30 | -.98 | .95 | .94 | |
| SP6 | 2.46 | 1.14 | .06 | .04 | -1.42 | .74 | .77 | |
| SR1 | 2.63 | 1.24 | .06 | -.16 | -1.60 | .70 | .73 | .93 |
| SR2 | 1.94 | 0.84 | .04 | .17 | -1.43 | .93 | .93 | |
| SR3 | 2.07 | 1.29 | .06 | .65 | -1.34 | .93 | .93 | |
| SR4 | 1.84 | 0.94 | .05 | .48 | -1.34 | .91 | .90 | |
| SR5 | 1.91 | 0.87 | .04 | .23 | -1.46 | .95 | .96 | |
| SR6 | 3.27 | 0.94 | .05 | -.93 | -.42 | .62 | .65 | |
| SM1 | 2.48 | 1.15 | .06 | .00 | -1.43 | .84 | .84 | .94 |
| SM2 | 2.42 | 1.11 | .06 | .09 | -1.32 | .87 | .87 | |
| SM3 | 2.49 | 1.12 | .06 | .03 | -1.36 | .86 | .86 | |
| SM4 | 2.49 | 1.14 | .06 | .02 | -1.40 | .83 | .83 | |
| SM5 | 2.48 | 1.11 | .06 | .03 | -1.35 | .87 | .87 | |
| SM6 | 2.47 | 1.13 | .06 | .02 | -1.40 | .85 | .85 | |

We ensured that respondents took the survey in their schools for safety reasons and to avoid travelling far. Before the visit, all participating school principals were notified about the exercise, the anticipated or intended participants, and the data collection date. As soon as we received permission from the schools, we went to each one with a team of eight research assistants. The respondents (principals and vice-principals) were given copies of the questionnaires to complete. One school could not be visited owing to a war going on. Thus, 203 and 207 principals and vice-principals instead of 204 and 299 were targeted as participants.

3.5. Exploratory factor analysis (EFA)

Data were initially assessed using exploratory, descriptive analysis, including box plots, skewness, kurtosis (to check for outliers and normality) and inter-item correlation (to check for non-clustered items). These were done following instrument validation research instructions (e.g., Bassey et al., 2020; Field, 2005; Owan et al., 2021). The preliminary screening test found no non-clustered items across all instruments since they were associated with each other in the matrix. EFA was utilised to analyse the dimensionality and factorial structure of the two instruments employed in this investigation. We utilised the Maximum Likelihood (ML) estimation since the data collected passed the normality test (see Tables 1 and 2). The specific procedures of the EFA for the two instruments are discussed hereafter.

3.6. EFA of the SPRMQ

The box plot revealed no evidence of an outlier. The skewness scores for this questionnaire ranged from -0.934 to 0.652, while the Kurtosis values ranged from -1.595 to -0.415. These values were within the normality range acceptable for structural equation modelling (SEM). According to Brown (2015), a range of -3 to +3 (for skewness) and -10 to +10 (for kurtosis) are acceptable for normality when using the SEM technique. Values outside this range are dubious, even though SEM is a relatively robust statistical process that can resist minor breaches of the normality assumption (Griffin and Steinbrecher, 2013). The correlation matrix determinant value of .000 was larger than the threshold value of .00001 for the SPRMQ, showing the lack of multicollinearity among the matrix's items. EFA was carried out using the maximum likelihood approach with varimax rotation. The extraction was performed based on

eigenvalues greater than one. The analysis was set to the default 25 iterations but to suppress factor loadings smaller than .30.

Consequently, a three-factor solution was identified that accounted for 77.23 per cent of the overall variation. The Kaiser-Meyer-Olkin (KMO) test of sampling adequacy gave a value of .88, indicating that the sample of 500 school leaders employed in the research was suitably large to do factor analysis on the data. Bartlett's test of sphericity yielded a significant result, $\chi^2(153) = 9418.37, p < .05$. "This means that there is no duplication among the variables and that the observed correlation matrix deviates from the identity matrix, indicating that it is acceptable for data reduction using ML estimation" (Owan et al., 2021, p.9). The

Table 2. Descriptive statistics and factor loadings of items measuring job commitment, with Cronbach alpha reliability estimates.

| Items | \bar{x} | SD | SE | Skewness | Kurtosis | EFA | CFA | Cr. Alpha |
|-------|-----------|------|-----|----------|----------|-----|-----|-----------|
| AC1 | 2.28 | 1.66 | .08 | 1.73 | 2.58 | .90 | .92 | .95 |
| AC2 | 2.94 | 2.20 | .11 | 1.03 | -.23 | .55 | .55 | |
| AC3 | 2.57 | 1.57 | .08 | 1.53 | 2.45 | .90 | .93 | |
| AC4 | 2.36 | 1.71 | .08 | 1.65 | 2.32 | .89 | .92 | |
| AC5 | 2.10 | 1.68 | .08 | 2.00 | 2.41 | .92 | .94 | |
| AC6 | 3.04 | 1.50 | .07 | .91 | 1.30 | .77 | .80 | |
| AC7 | 2.81 | 1.62 | .08 | 1.13 | 1.44 | .81 | .84 | |
| AC8 | 2.49 | 1.57 | .08 | 1.65 | 2.81 | .92 | .94 | |
| CC1 | 2.74 | 1.68 | .08 | .81 | .40 | .85 | .90 | .94 |
| CC2 | 2.58 | 1.53 | .08 | .75 | .32 | .83 | .82 | |
| CC3 | 2.43 | 1.59 | .08 | 1.20 | 1.42 | .78 | .81 | |
| CC4 | 2.67 | 1.63 | .08 | .65 | .12 | .80 | .83 | |
| CC5 | 2.99 | 1.63 | .08 | .56 | .72 | .69 | .72 | |
| CC6 | 2.57 | 1.54 | .08 | .58 | -.13 | .87 | .85 | |
| CC7 | 2.79 | 1.50 | .07 | .75 | .74 | .69 | .71 | |
| CC8 | 2.73 | 1.72 | .09 | .73 | .23 | .88 | .92 | |
| NC1 | 2.95 | 1.95 | .10 | 1.07 | .36 | .91 | .92 | .97 |
| NC2 | 2.88 | 1.92 | .10 | 1.12 | .49 | .88 | .90 | |
| NC3 | 2.85 | 1.90 | .09 | 1.11 | .49 | .86 | .88 | |
| NC4 | 2.88 | 1.92 | .10 | 1.10 | .40 | .90 | .91 | |
| NC5 | 2.86 | 1.89 | .09 | 1.07 | .39 | .88 | .91 | |
| NC6 | 2.91 | 1.93 | .10 | 1.08 | .39 | .88 | .89 | |
| NC7 | 2.86 | 1.88 | .09 | 1.10 | .50 | .89 | .91 | |
| NC8 | 2.85 | 1.94 | .10 | 1.15 | .58 | .87 | .88 | |

three factors were preserved when examining the pattern matrix for loadings of the relevant items on their latent components. Each item's loadings on its corresponding factor varied from .62 to .98 (see Table 1). Each of the three factors was subjected to a Cronbach Alpha reliability assessment. The reliability analysis revealed reliability coefficients of .97, .93, and .94 for staff placement, retraining, and motivation, respectively.

3.7. EFA of the JCQ

The same procedure used for the SPRMQ was followed in revalidating the JCQ. The normality test indicated a skewness range of 0.564 – 1.997 and a Kurtosis range of -0.228 to 2.81. All these values were inside the permissible range for structural equation modelling. Every item in the matrix was related to at least one other item. The KMO value for sample adequacy was .90, while the Chi-square value for the Bartlett's test of sphericity was significant, $\chi^2 (276) = 11863.01; p < .05$. This demonstrates that the sample size and data set were eligible for factor analysis. The ML analysis found a three-factor solution based on Eigenvalues greater than one after filtering small coefficients smaller than .30. Together, the three extracted factors explained 74.64 per cent of the variation. Additionally, a closer examination of the scree plot revealed that only three factors had Eigenvalues larger than one. The loadings of different items on their corresponding latent factors varied between .55 and .92 (as summarised in Table 2).

3.8. Confirmatory factor analysis (CFA)

CFA was done based on the Maximum Likelihood (ML) estimation approach. According to Owan et al. (2021), the CFA "determines the accuracy with which variables measure their respective factors (constructs); assesses the acceptability or otherwise of hypothesised models based on theoretical models; and verifies the existence of relationships established by the EFA between observed variables (indicators) and their supposed constructs" (p. 11). The CFA was used to assess how individual items might measure their specific latent factors in this investigation. Additionally, it was utilised to evaluate the legitimacy, or lack thereof, of the exploratory factor analysis findings previously reported in Tables 1 and 2. In Tables 1 and 2, the findings of the CFA were compared to those of the EFA for clarification. However, the CFA models for the two instruments are shown in Figures 1 and 2. As can be seen (in Tables 1 and 2 or Figures 1 and 2), the CFA loadings for the numerous items within each construct were almost identical to the EFA, demonstrating that the EFA outcomes were genuine and the dimensionality of the various instruments was theoretically sound. As with the inter-item correlation matrix, the CFA result did not show any problematic items in either model.

3.9. The goodness of fit tests for the two CFA models

Various fit indices were used to assess the established CFA models' goodness of fit to their underlying theoretical models. Numerous fit indicators were chosen owing to their overlapping strengths and weaknesses and per the recommendations of other scholars. For example, Kline (2016) advised that a minimum of four fit indices (χ^2 , RMSEA, CFI, and SRMR) be used to determine if a CFA model should be accepted. To assess whether to accept the CFA models in this investigation, a broad range of eleven carefully chosen fit indices were employed. These include the Chi-Square, the "Adjusted Goodness of Fit Index" (AGFI), the "Parsimonious Goodness of Fit Index" (PGFI), the "Normed Fit Index" (NFI), "Relative Fit Index" (RFI), the "Incremental Fit Index" (IFI), the "Tucker-Lewis Index" (TLI), the "Comparative Fit Index" (CFI), the "Parsimonious Normed Fit Index" (PNFI), the "Root Mean Square Error of Approximation" (RMSEA).

The Chi-square index measures the degree of difference between a sample and its fitted covariance matrix; it is commonly considered very sensitive to sample size (Cornell Statistical Consulting Unit, CSCU, 2021). The presumption is that the Chi-Squared value of the model must be

insignificant for it to be accepted (Owan et al., 2021). The GFI is used to quantify "the proportion of variance explained by estimated population covariance," with cutoff values of 0.95 (CSCU, 2021, p.1). The NFI, RFI, IFI, CFI, and TLI measure how an estimated model improves the fit compared to the theoretical or null model (Owan et al., 2021). These statistics have a range of values between .00 and 1.00, with values closer to 1.00 suggesting a better match (Hooper et al., 2008). To be regarded as a decent model, these indices must be more than .95 (Hu and Bentler, 1999; CSCU, 2021).

The AGFI, PGFI, and PNFI alter the Goodness of Fit (GFI) and Normed Fit indices by accounting for degrees of freedom. These indices may have values that are not between 0 and 1. Both indices heavily penalise model complexity, resulting in values for the parsimony fit index much lower than those for other goodness of fit indices (Mulaik et al., 1989). According to the mentioned source, parsimony fit indices can be in the .50 range, whereas other goodness of fit indices surpass the .90 barrier. Nonetheless, there is no commonly recognised cutoff point for adopting a model or not.

The RMSEA value reflects how well the model fits the population's covariance matrix when parameter estimates are unknown but optimum (Bassey et al., 2019). According to Brown (2015), an RMSEA value $\leq .06$ indicates a satisfactory model fit. According to some experts, the RMSEA value should be less than .08 for a model to be regarded as acceptable (MacCallum et al., 1996). The model fits shown in Table 3 were assessed using these criteria and thresholds.

An assessment of the models in Table 3 revealed that the performance of the two models was not bad. Although both models failed the Chi-squared test, it is quite understandable because the study's sample size ($n = 500$) is considerably large. The Chi-squared test, in a large sample ($n \geq 400$), is often indicative of a model that does not fit the data, resulting in a Type I error (Myers et al., 2010). The SPRMQ three-factor model can be considered acceptable based on the evidence of the AGFI, TLI CFI, PNFI, RFI, IFI, RMSEA and SRMR. A value of .95 or higher was required for the NFI index, but the value obtained in this study is .91, which is relatively fair. There is no acceptable threshold for the PGFI and PNFI. However, values of .51 and .70 were obtained for the PGFI and PNFI, respectively. The JCQ model performed well by meeting all other criteria except the Chi-Squared and AGFI criteria. Based on these grounds and the acceptable factor loadings recorded for all the items to each factor, all the models were retained, and the validated instruments were considered suitable for data collection in the main study and by future researchers.

4. Results

4.1. Research question 1

How much does placement cause variation in instructors' AC, CC, and NC in secondary schools? According to Figure 3, placement has a significant contribution to the CC of staff in secondary schools ($\beta = .113, B = .149, z = 2.199, p < .05$). This means that 1% improvement in staff placement practices is associated with a 0.11% increase in staff commitment in the continuance dimension. However, no significant contribution of placement was found for the affective ($\beta = .031, B = .042, z = .601, p > .05$) and normative ($\beta = .019, B = .03, z = .366, p > .05$) dimensions. By implication, improving staff placement by 1% will lead to increments of 0.031% and 0.019% in their AC and NC, respectively, so long as other factors remain unchanged.

The result also revealed that a 1% increase in staff placement is connected with 0.99%, 0.94%, 0.93%, 0.83%, 0.87% and 0.85% increases in administrators considering staff educational qualifications when assigning duties (SP1), considering the job experience of staff before delegating responsibilities (SP2), assigning tasks to staff based on their area of specialisation (SP3), making efforts to identify the strengths/weaknesses of employees before delegating duties accordingly (SP4), assigning functions to staff beyond their competence level (SP5) and non-assigning of duties based on sentiments (SP6). Furthermore,

Figure 3 reveals that staff placement is accountable for 99.1%, 87.9%, 85.5%, 69.1%, 76.0% and 72.5% of the total variance explained in SP1, SP2, SP3, SP4, SP5 and SP6 respectively. By implication, the error variance of SP1, SP2, SP3, SP4, SP5 and SP6 that represents the unaccounted portion of the variance is 0.9%, 12.1%, 14.5%, 30.9%, 24% and 27.5% respectively. The contribution of staff placement to SP1 through to SP6 was statistically significant at the .05 alpha level.

4.2. Research question two

To what extent does retraining predict instructors' commitment across the three dimensions in secondary schools? **Figure 3** shows that retraining predicts staff job commitment significantly in the affective ($\beta = .183, B = .312, z = 3.419, p < .05$), continuance ($\beta = .265, B = .44, z = 4.942, p < .05$) and normative ($\beta = .269, B = .539, z = 5.018, p < .05$)

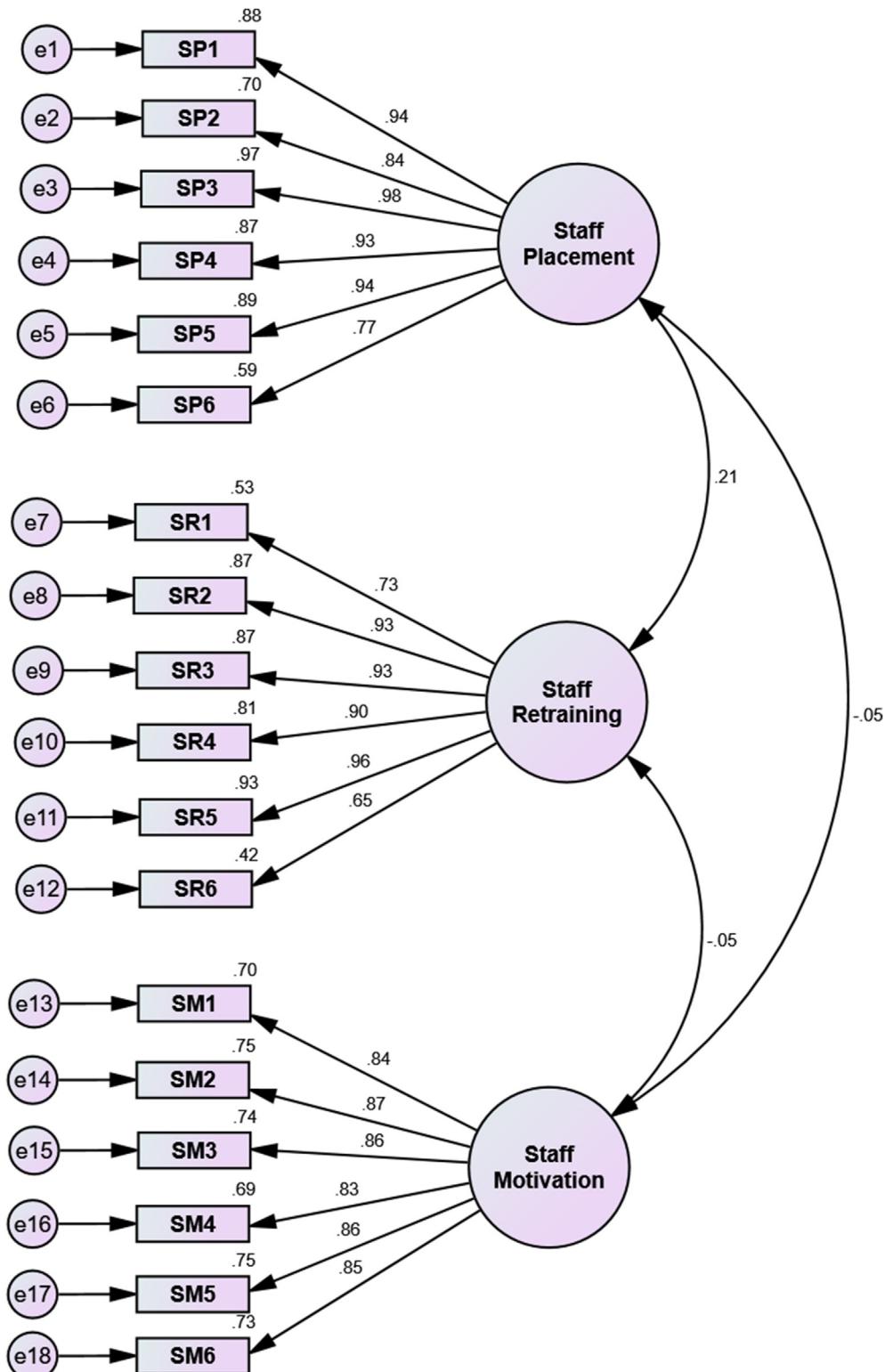


Figure 1. Standardised three-factor latent-trait CFA model of the SPRMQ

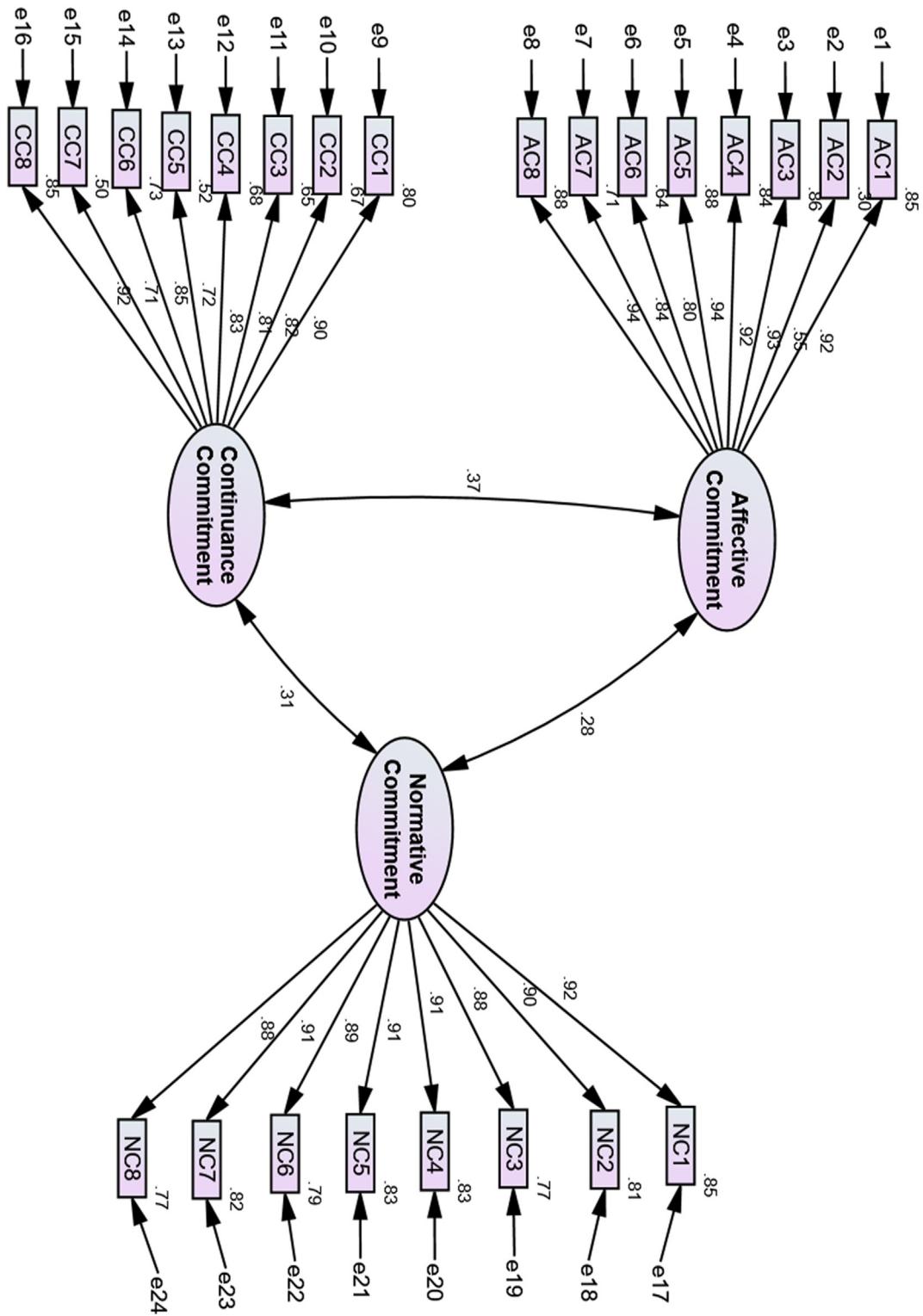


Figure 2. Standardised three-factor latent-trait CFA model of the JCQ.

dimensions. In other words, a 1% increase in staff retraining is associated with a 0.183%, 0.265%, and 0.269% increases in their AC, CC and NC respectively. The result in Figure 3 also reveals that staff retraining is significantly responsible for educational managers getting staff to understand the value of each retraining opportunity provided (SR1, $\beta = .725, p < .05$), encouraging members of staff to work in teams so that new staff can learn from more experienced workers (SR2, $\beta = .935, p < .05$,

sourcing for guest experts to offer professional growth training in areas that staff need to improve (SR3, $\beta = .935, p < .05$).

Also, the result in Figure 3 shows that retraining is responsible for educational managers using staff who are experts in certain areas to offer training to others deficient in such areas (SR4, $\beta = .904, p < .05$); sponsoring staff to attend conferences to acquire new skills/knowledge (SR5, $\beta = .96, p < .05$); offering self-development training opportunities

Table 3. Goodness of fit tests of the two three-factor CFA models.

| SN | Fit indices | Threshold | SPRMQ | JCQ |
|-----|-------------|------------|-----------------------------|---------------------------------|
| 1 | χ^2 | $p > .05$ | 1793, df = 13, $P < .05$ | 1704.83, df = 249, $p < .05$ |
| 2 | AGFI | $\geq .95$ | .95 | .91 |
| 3 | PGFI | $\geq .50$ | .51 | .63 |
| 4 | NFI | $\geq .95$ | .91 | .96 |
| 5 | RFI | $\geq .90$ | .91 | .90 |
| 6 | IFI | $\geq .90$ | .93 | .91 |
| 7 | TLI | $\geq .95$ | .96 | .95 |
| 8 | CFI | $\geq .95$ | .96 | .96 |
| 9 | PNFI | $\geq .50$ | .70 | .78 |
| 10 | RMSEA | $\leq .08$ | .06 | .04 |
| 11. | SRMR | $\leq .08$ | .05 | .07 |

to help staff improve on personal attributes such as performance, behaviour, communication and interpersonal skills (SR6, $\beta = .646, p < .05$). The result further indicated that 52.5%, 87.4%, 87.5%, 81.7%, 92.1%, and 41.7% accounted for portions of the variance in SR1, SR2, SR3, SR4, SR5 and SR6, respectively, is associated with retraining. In other words, the error variances in SR1, SR2, SR3, SR4, SR5 and SR6 account for 47.5%, 12.6%, 12.5%, 18.3%, 7.9% and 58.3% of the unexplained portions of the variances.

4.3. Research question three

How much does staff motivation predict teachers' commitment across the three dimensions in secondary schools? The result of our analysis demonstrate that motivation does not play a significant role in predicting teachers' job commitment in the affective ($\beta = -.015, B = -.024, z = -.299, p > .05$), continuance ($\beta = .017, B = .027, z = .346, p > .05$), and normative ($\beta = .004, B = .008, z = .081, p > .05$) dimensions. In other words, a 1% increase in staff motivation causes a 0.015% decrease in their AC and 0.017% as well as 0.004% increments in their CC and NC, respectively, other things being equal. This implies that the unaccounted portions of the variance are associated with the error terms.

In a more specific sense, our analysis confirmed that motivation is significantly responsible for principals allowing team members personal problem-solving autonomy instead of micro-managing the team (SM1, $\beta = .837, p < .05$), awarding performance-based bonuses to staff who achieve the right results (SM2, $\beta = .868, p < .05$), and acknowledging the contributions of staff through appreciation (SM3, $\beta = .86, p < .05$). It was also revealed that motivation is also the factor responsible for managers offering support to teachers who are under stress (SM4, $\beta = .831, p < .05$), quietly thanking staff for unsolicited acts of interpersonal kindness (SM5, $\beta = .865, p < .05$), and providing self-development opportunities for staff (SM6, $\beta = .853, p < .05$). Additionally, 70%, 75.4%, 74%, 69.1%, 74.8%, and 72.8% of the variation in SM1, SM2, SM3, SM4, SM5, and SM6 is accounted for by motivation. This implies that error variations account for 30%, 24.6%, 26%, 30.9%, 25.2%, and 27.2 of the variances that remain unexplained in SM1, SM2, SM3, SM4, SM5, and SM6 respectively.

4.4. Research question four

What composite prediction has staff motivation, placement and retraining on teachers' commitment (in terms of AC, CC, and NC) in secondary schools? Our analysis revealed that the joint prediction of staff motivation, placement and retraining is 3.9% (for AC), 10.1% (for CC) and 7.6% (for NC). These values represent the total variances in the three aspects of job commitment explained by the three upstream variables. Other extraneous predictors could account for 96.1%, 89.9%, and 92.4% of the unexplained AC, CC, and NC variances.

We further correlated the three predictor variables. Our results indicated a weak-positive but significant relationship between staff placement and retraining, $r = .315, z = 5.75, p < .05$. While this result does not indicate that one variable causes the other, it does tell us that a unit increase in staff placement relates to a 0.315 increase in staff retraining (and the other way around) if other factors remain constant. The correlation between staff retaining and motivation was found to be inversely weak but not significant, $r = -.048, z = -.932, p > .05$. This result suggests that as either one of retraining or motivation increases by a unit, the other decreases by 0.048 units, other things being equal. The relationship between staff placement and motivation was also found to be weak and negative, but not statistically significant, $r = -.066, z = -1.28, p > .05$. This implies that when retraining or motivation rises by one unit, the other drops by 0.066 units, all other conditions being equal.

5. Discussion

The relative and joint prediction of placement, motivation and retraining to the AC, CC and NC of secondary school teachers was the thrust of this study. The study uncovered patterns of relationships among the study's variables. Based on the first research question, it was documented that placement significantly predicts the continuance commitment of staff in secondary schools. However, staff placement does not play a significant role in affective and normative aspects of job commitment. This result implies that assigning duties and responsibilities to staff is associated with their intention to remain loyal to their jobs. Even if they were to quit, it is improbable to happen due to the contractual terms that bind both parties. Besides, placement enables employees to function effectively in their jobs. This result agrees with the submission that there is a considerable euphoria in doing activities that one is good at (Ronfeldt, 2015). The three-component theory is consistent with these results because some workers are likely to remain in organisations due to the agreement between them and the organisation (Allen and Meyer, 1990).

However, the result suggests that job placement may lead to a negligible emotional connection between workers and organisations on the affective dimension. Although it was not proven in the current study whether the small effect may prevent turnover, it suggests that employees' affective commitment is more intrinsic than extrinsic. Workers' emotions towards organisations may be driven by internalities (such as a passion for the job, interest, love and so on) rather than what happens externally in the environment. This agrees with the evidence presented by other studies that the psychological orientation of teachers predicted their commitment to public institutions (Agyeiwaah and Dayour, 2021; Debebe, 2021; Matovu and Nabayinda, 2020). Furthermore, another study proved that many teachers are committed and passionate because they love the teaching profession and are willing to commit to its growth regardless of the events occurring in the organisation (Moses et al., 2017). On the continuance dimension, this study's result implies that staff placement will not lead to any remarkable willingness among staff to remain loyal to an organisation. The result may be emotional detachment among loyal employees because of their rewards working for the schools. For this group of employees, nothing tends to affect them as long as they keep receiving their incentives and salaries (Allen and Meyer, 1990; Owan, 2021).

The second research question verified that retraining predicts, to a significant extent, staff job commitment in the normative, continuance and affective dimensions. This result implies that increasing the retraining opportunities offered to teachers is more likely to make them stay with the organisation. This result may be due to the improved skills that retraining offered to staff, making them function effectively. This result corroborates other studies establishing that employees must be retrained to perform duties effectively (Aboyassin and Sultan, 2017; Arap et al., 2019). Contrary to the result of the current study, research has found that staff retraining alone decreases the rate of staff commitment unless paired with other variables such as remuneration, motivation,

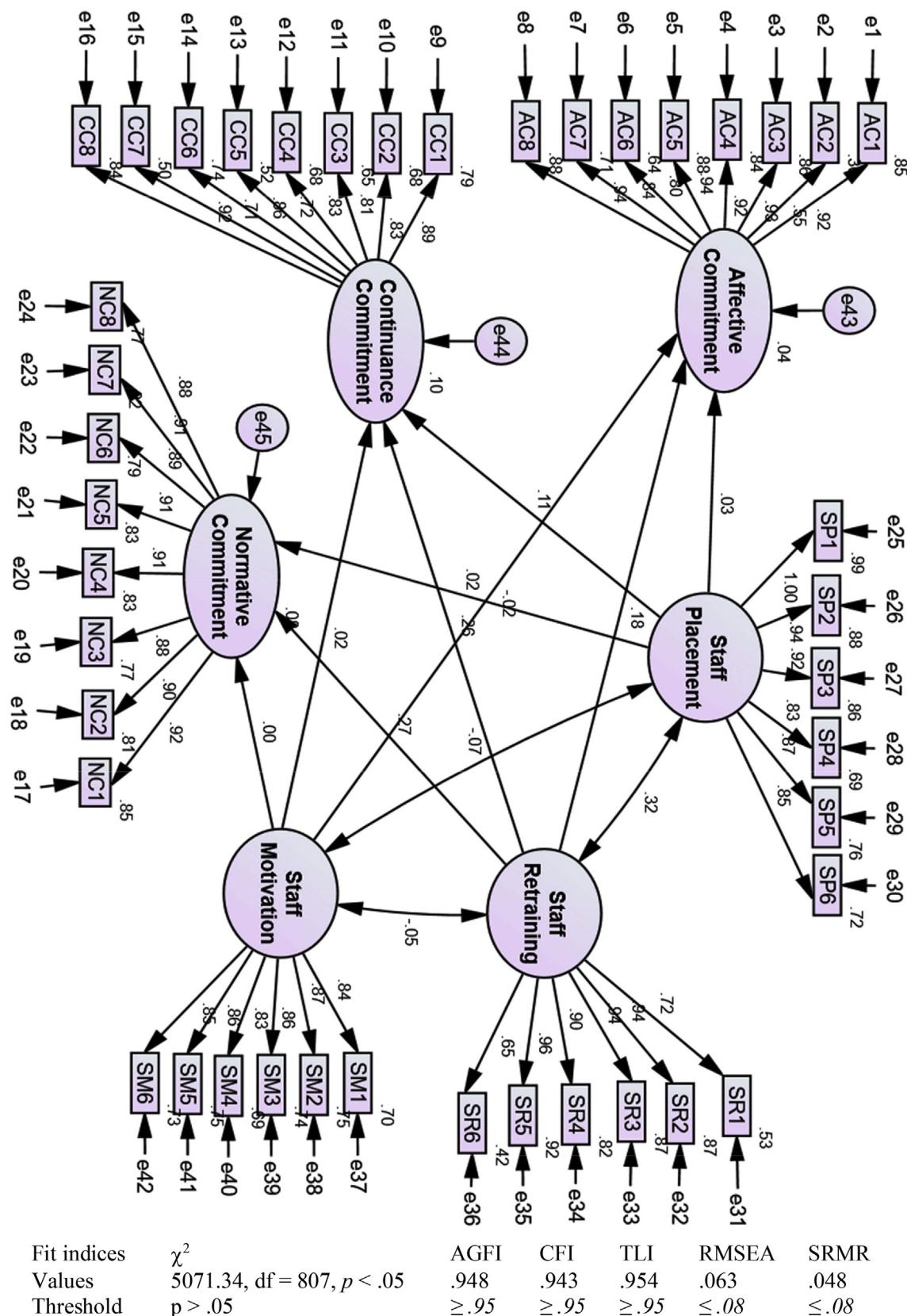


Figure 3. Measurement and structural equation model of the prediction of placement, retraining, and motivation to the AC, CC and NC of teachers.

correct placement and job security (Owan, 2021). The contrasting position between the research of Owan and the current study may be attributed to methodological and analytical differences in both studies. Although both studies used the structural equation modelling approach, the cited study was path analytic, whereas the current study is based on factor analysis.

The result of the third research question disclosed that motivation is not predictive of instructors' job commitment in the three aspects. According to this result, efforts made by educational managers to extrinsically motivate the workforce does not make a substantial contribution to employee loyalty. This implies that teachers' decision to remain committed transcends efforts to boost extrinsic motivation. This suggests that teachers' decision to remain with an organisation may be due to their intrinsic motives. While the current study did not cover the intrinsic aspect of motivation, previous research has demonstrated that employee intrinsic motivation significantly predicts their turnover intentions (Gheitani et al., 2019; Okubanjo, 2014; Zadeh et al., 2016). A similar finding was recorded in Pakistan that no direct association between motivational factors (absence of motivation and extrinsic motivation) and turnover intentions exist, except for intrinsic motivation. One major surprise in the current study is that motivation is inversely correlated with AC. Since the strength of the relationship is very weak and non-significant, we attribute the result to a chance situation.

The study's fourth research question revealed that low variation rates were jointly explained by motivation, placement and retraining in the AC, CC and NC of teachers. The three exogenous variables did not explain up to 60% of teachers' job commitment variances across the three components. Since some variables in this study are psychological, a high rate of R squared was not anticipated. Nevertheless, the rate of variance explained by the predictors of this study is like the ones obtained by other studies (e.g., Maryam et al., 2020; Okubanjo, 2014; Owan, 2021; Zadeh et al., 2016). Although the contribution is low, the result implies that well-placed, often retrained, and motivated teachers using suitable tools/channels are more likely to be committed to their organisations. This result supports the evidence of earlier studies (e.g., Berridge, 2018; Chraifa and Aniteib, 2012).

6. Limitations of the study

This research has a few drawbacks (typical of any study). Primarily, the research was conducted in an underdeveloped nation with a narrow geographic region (Nigeria). The generalisations presented may only apply to underdeveloped countries or a specific field of study. For this reason, comparative studies in this field are essential for industrialised countries. In order to make meaningful comparisons, industrialised countries will need to do further study in this area. Secondly, only the extrinsic aspect of motivation was used as a proxy for motivation because the focus was on the activities of educational managers in motivating workers. This indicates that the intrinsic aspect of motivation among staff was not measured manifestly in the current study since it pertains to the staff. Although it can be argued that the extrinsic motivation practices of leaders may be connected to the intrinsic motives of staff, this was not proven empirically in the present study. To address this concern, future studies should focus on the intrinsic aspect. Lastly, only three upstream variables were examined in this research, although many more might have been considered.

7. Conclusion

This study provided evidence that some staff personnel management methods are crucial to fostering teacher commitment in secondary schools. Retraining is the best way to improve the AC, CC, and NC among staff to improve their retention. Placement plays a predictive role in boosting the continuance component of job commitment of staff; it does not significantly predict the other aspects (affective and normative). Extrinsic motivation does not play a (significant) role in raising employee

loyalty unless they are passionate about their jobs. The use of motivation tends to decrease workers' affective commitment, but not to a substantial degree. School leaders must offer innovative personnel management services to prevent a rise in the number of teachers leaving the profession. Teachers' responsibilities should always be delegated following their abilities, expertise, and speciality areas. Teachers with the most passion for work should be given the most challenging assignments to foster positive attitudes in the classroom. Teachers in secondary schools should only be hired if they have received specialised training from accredited institutions. Teachers should have regular chances for re-education based on the dynamics of society to maintain a strong teaching force. Incentives should be given to instructors who show improvement in their performance and dedication, such as frequent promotions, regular salary payments, and other rewards. Teachers who do well could be rewarded with presents and recognition from managers and colleagues.

Declarations

Author contribution statement

Valentine J. Owan; Francisca N. Odigwe; Abigail E. Okon; Jennifer U. Duruamaku-Dim; Isaac O. Ubi; Emmanuel E. Emanghe; Mercy V. Owan; Bassey A. Bassey: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Funding statement

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data availability statement

Data will be made available on request.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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