

Job characteristics and work engagement among secondary school teachers: the moderating role of co-worker support

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Abstract

This study examines the moderating effect of co-worker support on the relationship between job characteristics and employee work engagement among secondary school teachers in Tanzania. A cross-sectional research design was adopted; data were collected using a structured questionnaire from 221 randomly selected respondents, and analysis was carried out using structural equation modelling. The findings indicate that job characteristics have a positive and significant relationship with employee work engagement ($\beta = 0.478, p = 0.001$). Additionally, the moderating effect of co-worker support on the relationship between job characteristics and employee work engagement is positive and significant ($\beta = 0.305, p = 0.046$). Conversely, the findings indicate that the relationship between co-worker support and employee work engagement is not statistically significant ($\beta = 0.217, p = 0.067$). These findings have implications for theory and management, suggesting that managers in the education sector should prioritise fostering a supportive atmosphere among teachers and encouraging mutual assistance and collaboration. This can create a work environment where employees feel valued and empowered, leading to increased job satisfaction and engagement. The study aligns with the job characteristics model, highlighting that job characteristics promote positive outcomes like relationship-building, teamwork, and employee retention. It recommends evaluating jobs to improve their features, making them more attractive and rewarding, which increases employee engagement. Additionally, ambiguous and less attractive jobs should be redesigned to minimise anxiety and stress.

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1. Introduction

Employee engagement has gained significant attention in management practices literature due to its potential to address various organizational challenges such as employee retention and performance (Radda et al., 2015; Zahidah et al., 2018). Similarly, engaged employees are emotionally and intellectually connected to the organization and contribute to its goals, resulting in improved morale, productivity, and retention rates (Prabhakar & Reddy, 2016; Radda et al., 2015). Nevertheless, employee engagement enhances employee morale, productivity, and retention in the company (Bedarkar & Pandita, 2014). Furthermore, engaged employees are innovative, creative, and less absent from work; consequently, they benefit both their customers and the employer (Hameduddin, 2021; Kapil & Rastogi, 2020). Farndale and Murrer (2015) assert that employee engagement is an important element for maintaining organizational survival and profitability. Hence, literature informs us that engaged employees achieve the goals of the organization and enhance its competitive advantage even in an unstable business environment (Liang et al., 2017; Zahidah et al., 2018).

Despite the importance of employee engagement, many organizations struggle to maintain high levels of engagement (Osborne & Hammoud, 2017a). This is evident in various sectors, including the oil and gas industry, where low employee engagement and high turnover rates are observed (Naidoo et al., 2018; Radda et al., 2015). Moreover, Bakker (2011) surveyed 368 human resources (HR) professionals working in business, government, education, consulting, and not-for-profit organizations in Canada and found that 69% of the research participants established that employee engagement was a problem in their organizations. In the context of Tanzania, the education sector in particular also experiences disengagement among teachers as evidenced by absenteeism, inadequate lesson preparations, and teachers being less committed and less passionate about their work (Mgonja, 2017; Obiero et al., 2017). Teachers' disengagement in schools negatively affects the learning process and students' academic achievement (Siachifuwe, 2017). Absenteeism and turnover are indicators of disengagement (Tao, 2013; Wandira et al., 2015). Despite efforts to address these issues, including the remittance of competitive remuneration packages, many teachers remain disengaged (Kibambila, 2021; Osborne & Hammoud, 2017b; Wandira et al., 2015). Therefore, understanding the factors that influence job engagement among teachers is crucial for improving educational outcomes. This paper aims to explore the intricate dynamics

between job characteristics, co-worker support, and employee work engagement. It further seeks to understand how these factors interact with each other in influencing employees' levels of engagement at work, particularly in Tanzania's education sector.

2. Literature review

2.1 Social exchange theory

This study is guided by the social exchange theory of George Homans (1958). The theory posits that individuals seek to maintain a balance between the contributions they make to an organization (efforts, skills, and time) and the rewards they receive in return (such as pay, recognition, and support). Therefore, in jobs whose characteristics align with employees' skills, interests, and values, they perceive their contributions as equitable, leading to higher levels of work engagement. The theory also stresses the importance of psychological contracts between employees and organizations. When job characteristics meet or even exceed the job holder's expectations, they develop a positive psychological contract with the organization, fostering a sense of passion and commitment (Jegede & Ola-Olorun, 2017). This positive exchange encourages greater work engagement as job holders are motivated to reciprocate the support they get from the organization. Furthermore, job characteristics can provide employees with various resources that enhance their work engagement, such as autonomy, opportunities for skill development, and feedback (Alini et al., 2014; Sorsa, 2017). The theory explains that when employees perceive that their job provides them with valuable resources, they are more likely to invest effort in their work, leading to higher levels of work engagement (Zaman et al., 2020). The social exchange theory climaxes the importance of social relationships in the workplace by asserting that job characteristics that promote positive interactions with co-workers and supervisors can contribute to employees' sense of belonging and support within the organization (Ahmad & Bibi, 2016; Garg et al., 2017). As a consequence, employees may increase their work engagement as they feel valued and respected by their peers and supervisor. Hence, overcoming job stress, as supported by Ahmad and Bibi (2016), indicates that co-worker support reduces work stress and increases job satisfaction.

2.2 The job characteristic model

The job characteristics model (JCM) is a framework developed by Hackman and Oldham in the 1970s for the purpose of understanding how job design affects employee motivation, satisfaction, and performance (Debnath & Pointer, 2007; Oldham & Hackman, 2010). The model identifies five core job characteristics that contribute to meaningful work and boost intrinsic motivation (Bagia, 2019). The core job characteristics, according to JCM, are skill variety, task identity, task significance, autonomy, and job-related feedback. Skill variety is the range of skills and activities required to perform a job (Debnath & Pointer, 2007; Oldham & Hackman, 2010). Jobs that involve a variety of tasks and challenges tend to be more engaging and interesting. Task identity refers to the extent to which a job involves completing a whole and identifiable piece of work rather than just a small part of a larger task (Demirer & Researcher, 2021). Jobs with a high task identity allow employees to see the outcome of their efforts, which can raise their sense of achievement and responsibility. Moreover, task significance is a job characteristic that measures the impact of the job on others or the organization as a whole (Judge et al., 2017). Jobs with a significant impact on others are typically more satisfying for employees. Nevertheless, job autonomy refers to the degree of freedom, independence, and discretion employees have in scheduling their work and making decisions related to their job tasks (Demirer & Researcher, 2021; Oldham & Hackman, 2010). Higher levels of job autonomy may result in increased job satisfaction and motivation for job holders. Job-related feedback is the extent to which employees receive clear information about the effectiveness of their performance (Demirer & Researcher, 2021; Oldham & Hackman, 2010). Regular feedback allows employees to evaluate their progress, learn from their mistakes, and make improvements, leading to greater satisfaction and motivation.

2.3 Hypotheses development

2.3.1 The relationship between job characteristics, co-worker support and employee work engagement

Job characteristics are aspects of a job that can influence employees' experiences and behaviours, while work engagement is a positive, fulfilling, work-related state of mind characterized by employee passion and commitment to the job (Judge et al., 2017). In practice, jobs will be effectively done by job incumbents when they share knowledge and skills and get encouragement from their co-workers. This is because almost all employees hardly possess all the required skills necessary for doing a particular job. Thus, co-worker support is required for effective job completion (Bagia, 2019; Raihan, 2021). Similarly,

Hackman and Oldham (1976) assert that jobs with high skill variety provide employees with opportunities to use and develop different skills; such jobs become engaging and interesting. Previous studies depict a positive, significant relationship between task variety and job satisfaction (Jiang et al., 2018; Lambert et al., 2015). Moreover, job satisfaction has a direct link with employee work engagement (Park & Johnson, 2019; Reissová & Papay, 2021). The job characteristics of autonomy reduces anxiety, stress, ambiguity, burnout, and conflicts at work (Demirer & Researcher, 2021). Previous scholarly work presents mixed results on the influence of job autonomy on job satisfaction. On the one hand, job autonomy was found to have a significant positive relationship with job satisfaction (Nalla et al., 2017; Voet & Walle, 2015).

On the other hand, Muwanguzi et al. (2022) found that job autonomy is not a significant predictor of job satisfaction among workers. According to Aruna and Anitha (2015), job autonomy helps employees decide on their working style for carrying out the undertaking. This study is centered on the teaching career. In its nature, teaching involves the delegation of tasks from high levels to lower levels of the leadership in schools. Teachers are given authority to manage students and other school affairs (Lyimo, 2014; Siachifuwe, 2017). To accomplish such duties, job holders need adequate support from co-workers. This is because a sense of autonomy entices employees to take on more responsibilities for their tasks, which require sufficient assistance to accomplish their undertakings (Tang et al., 2016). Nevertheless, jobs with a high task identity make employees see the direct impact as well as the value of their efforts, increasing their sense of responsibility and satisfaction (Hackman & Oldham, 1976). The influence of task identity on job satisfaction has been explored. Wegman, et al. (2016) found task identity and job significance were negative predictors of job satisfaction.

On the contrary, Bhd et al. (2016) found a significant relationship between task identity and job satisfaction. Such mixed results suggest a need for a moderator variable like co-worker support to study the relationship between job characteristics and employee work engagement. Co-worker support is reported to lead to job incumbents feeling identified with the job, motivating the job holder to keep doing the job (Gloriana et al., 2020; Saud, 2020). Jobs with high task significance make employees feel that their work contributes meaningfully and positively, leading to increased engagement and satisfaction (Debnath & Pointer, 2007; Oldham & Hackman, 2010). Previous studies on the topic present varied results. For example, Steyn and Vawda (2014) found a significant negative relationship between task satisfaction and job satisfaction. Gloriana et al. (2020) found task significance significantly and positively influences employee work engagement.

This study posits that meaningful jobs may entice job incumbents to invest time and effort and become engaged in the job. Job incumbents are likely to be committed to the job when sufficient assistance from co-workers is provided. Besides, constructive feedback given by co-workers can help job holders understand areas that need improvement (Ahmad & Bibi, 2016). Jobs that provide regular and meaningful feedback promote employee engagement and growth (Oldham & Hackman, 2010). Again, various studies have been done on the role of job feedback on job satisfaction and employee work engagement. Hamid (2017) indicated the existence of a strong positive relationship between job feedback and job satisfaction. One way of getting job feedback is from work colleagues by telling them how good they perceive the work done. Based on the above explanation, the study hypothesizes that:

H1: There is a positive and significant relationship between job characteristics and employee work engagement.

H2: There is a positive and significant relationship between co-worker support and employee work engagement.

2.3.2 Moderating role of co-worker support on employee work engagement

This study explores the moderating influence of co-worker support on the correlation between job characteristics and employee work engagement, specifically focusing on secondary school teachers. It aims to determine how co-worker support shapes the connection between job characteristics (JC) and employee work engagement (EWE) by addressing issues such as job stress, frustration, lack of motivation, and pressure, which can impede job performance (Bakara, 2023). Additionally, co-worker support has been associated with fostering positive outcomes such as job satisfaction, commitment, and accomplishment (Bakara, 2023; Ibrahim et al., 2020). According to Mayo et al. (2012), co-worker support encompasses various forms of assistance, including providing information, resources, empathy, mentorship, and other support mechanisms within the workplace relationship. Hence, organizations should prioritize behaviours that mitigate tensions, alleviate role conflict, and facilitate harmonious social

interactions among co-workers (Bakara, 2023; Koseoglu et al., 2018), which in turn is anticipated to enhance employee work engagement, characterized by the dedication and enthusiasm of employees towards their work (Gülbahar, 2017; Judge et al., 2017; Qadeer et al., 2016; Simbolon et al., 2018).

Moreover, co-worker support has been correlated with bolstering job incumbents' self-esteem (Peluso et al., 2017; Rupp et al., 2018), as their perceptions of support from colleagues, such as receiving guidance on effective work methods for successful task completion, can cultivate positive guidance on effective work methods for successful task completion and a positive job attitude (Sembe & Ayuo, 2017). Prior research suggests that providing sympathetic information enhances employees' intrinsic motivation and creativity (Mardanov, 2020; Young et al., 2018), contributing to employee well-being and fostering a sense of ease during times of stress and anxiety, thereby potentially elevating their passion and commitment to the job. Besides, receiving performance feedback from co-workers enables job holders to identify their strengths and weaknesses, which is crucial for fostering commitment to the job (Eliphas et al., 2017; Khuong & Yen, 2016). From the literature review, it is observed that there is limited research on the moderation effect of co-worker support in the relationship between job characteristics and employee work engagement. Again, there is a lack of understanding about how co-workers influence the strength or direction of the relationship between JC and EWE. From the explanations above, the study hypothesizes that:

H3: Co-worker support moderates the relationship between job characteristics and employee work engagement.

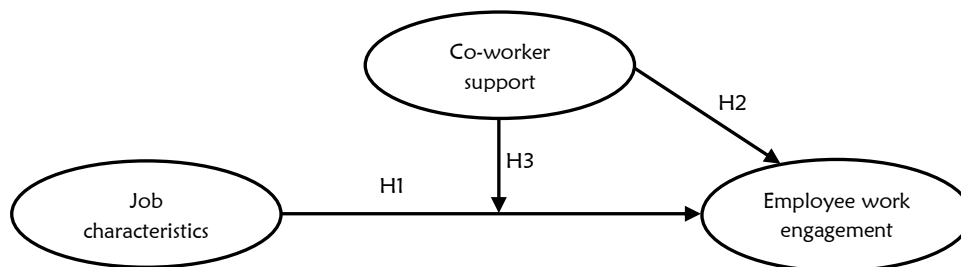


Figure 1. The conceptual model
Source: Figure by the author

3. Methodology

3.1 Study area and research design

The study was conducted in Tanzania, focusing specifically on secondary schools. The study is conducted in the education sector because the sector is a vital domain with unique characteristics that suggestively impact employee experience and outcome. Moreover, the nature of work in the education sector involves extensive interpersonal interactions and collaborations among co-workers. Hence, understanding the dynamics of job characteristics and work engagement in the education sector is crucial for organizational effectiveness, promoting employee well-being, and contributing to economic and social development. This is supported by Astakhova et al. (2016) and Heri and Mkulu (2022), who coined the idea that the education sector is a key to the economic and social development of any country. Good-quality education, which comes from good-quality teachers, students, and the effective involvement of parents in education, makes economic and social development possible (Paschal & Mkulu, 2020; Siachifuwe, 2017). Again, the study was conducted in two councils, Ruangwa District Council (Ruangwa DC) and Bukoba Municipal Council (Bukoba MC), which represent councils in Tanzania with unsatisfactory and good Form Four results for four consecutive years 2020 to 2023 (URT, 2023). The study adopted a cross-sectional research design, which created an opportunity for collecting data to test hypothesized relationships using a quantitative approach. This design required the researcher to collect data from several secondary school teachers from Bukoba MC and Ruangwa DC, the two councils, at once. Moreover, this design is considered not only less expensive but also saves time (Saunders et al., 2019).

3.2 Sampling and data collection

The sample for this study consisted of 142 secondary school teachers in Tanzania. The selection of participants was done using a random sampling technique. The technique allows for an equal chance for the elements in the sample to be selected to participate in the study and avoids bias (Lewis & Thornhill, 2019). Thus, it ensured the representation of respondents from different schools. Data were collected

using survey questionnaires, which were distributed to 142 respondents who returned complete responses. A questionnaire is a simple and useful instrument for evaluating and measuring the feelings of individuals as well as subjective concepts (Kim et al., 2016).

A proportional sampling was used to capture the representation of respondents from the two councils using Yamane's formula as follows:

$n = \frac{N}{1+N(e^2)}$ Where; n is the sample surveyed; N is the population (in this case $N = 221$ teachers obtained by summing up teachers in Bukoba MC (115) and teachers in Ruangwa DC (106); and e is the margin error ($e = 0.05$).

$$\text{Therefore: } n = \frac{221}{1+221(0.05^2)} = 142$$

Thus, the sample size of teachers in the two councils was 142. The proportionate sampling coefficient (p) was then calculated to get representation of teachers in each council, as follows:

$$p = \frac{n}{N} \text{ where } n = \frac{142}{221} = 0.64$$

To get the number of teachers involved in the study in each council, it follows that:

$$115 \times 0.64 = 74 \text{ teachers in Bukoba MC}$$

$$106 \times 0.64 = 68 \text{ teachers in Ruangwa DC}$$

The population of schools abbreviated as $N_s = 43$, which is obtained after summing up the number of schools in Ruangwa DC and Bukoba MC, which were 15 and 28, respectively. The respondents involved in the study were selected from each school to ensure representation, as follows:

$$n_t = \frac{\text{Number of teachers in a council}}{\text{Number of school in a council}}$$

$$\text{For the case of Bukoba MC: } n_t = \frac{74}{28} = 3 \text{ teachers in each school}$$

$$\text{For the case of Ruangwa DC: } n_t = \frac{68}{15} = 5 \text{ teachers in each school}$$

All the teachers were randomly selected. Hence, at least five (5) and three (3) teachers from Ruangwa DC and Bukoba MC schools, respectively, were taken from each school to participate in the study.

3.3. Measurement of study's variables

Employee work engagement was measured using two indicators: employee commitment and passion. Employee commitment was measured by assessing the extent to which employees felt dedicated, loyal, and attached to their work (Gasengayire & Ngatuni, 2022). Passion was measured by evaluating the level of enthusiasm, joy, and excitement employees experienced in relation to their work (Johri et al., 2016; Sigmundsson et al., 2020). The questions to use in gathering information on the two indicators were derived from the work commitment scale and the work passion scale (Mowday et al., 1979). The two scales are based on a five-point Likert scale ranging from "1-strongly disagree to 5- strongly agree" on how much they agree or disagree with the descriptions relating to the commitment and passion the teachers have for their teaching roles. These scales have been validated, and so the researcher adopted and modified the items to suit the purpose of the study.

Co-worker support was measured by evaluating the extent to which employees perceived support from their colleagues in the workplace (Kurtessis et al., 2017; Mascarenhas et al., 2022). This was assessed by asking participants to rate the level of support they received from their co-workers in terms of emotional support, assistance with work tasks, and collaboration. The social support scale by O'Driscoll (2000) was adopted to collect data. This scale consists of four items. The respondents had to indicate, on a six-point Likert scale ranging from "1-never to 6-all the time," the extent to which they were being supported by their co-workers at the workplace. This scale has previously been used by Karatepe et al. (2010) and O'Driscoll et al. (2004). To measure the job characteristics, the job characteristics model (JCM) was used. According to the model, job characteristics included job autonomy, skill variety, task significance, skill identity, and job feedback. Job autonomy was measured by assessing the level of independence and discretion employees had in making decisions related to their work. Skill variety was measured by evaluating the range and diversity of skills required to perform the job tasks. Task significance was measured by gauging the perceived impact and importance of the job tasks on others. Skill identity was measured by examining the extent to which employees felt their job tasks were meaningful and contributed to a larger purpose. Finally, job feedback was measured by assessing the extent to which employees received information and feedback about their performance on the job. A job diagnostic survey (JDS) by Hackman and Oldham (1976) was used to collect information on this variable. The survey has been used previously by Hamid (2017).

The reliability and validity of instruments were ensured through the adoption of modified validated data collection instruments (Amin, 2005). This was useful to the researcher to know if the questionnaires were expressed clearly and whether they were valid enough to collect data for the study. Also, Cronbach's alpha coefficient value was used to test the internal reliability of the variable, as suggested by Cronbach (1951). Cronbach alpha values for each variable were computed. The Cronbach's alpha coefficient value for job characteristics (JC) was 0.915, while that of co-worker support (CWS) was 0.817, and the Cronbach alpha for employee work engagement (EWE) was 0.836, indicating that reliability was achieved since the values were greater than the threshold of 0.7 (Cronbach, 1951; Tavakol & Dennick, 2011).

Table 1. Measurements, internal reliability and AVE

Construct/Items	Loading	AVE	MSV	Cronbach alpha	Construct reliability
Job characteristics		0.735	0.922	0.915	0.917
I get to use a number of complex skills on this job	0.814				
The job involves doing a number of different tasks	0.804				
I can use the skills that I have to handle the problems in my job	0.863				
I have chance to using a wide variety of different skills and talents	0.901				
I do a complete task from start to finish	0.864				
I have chance to do an entire piece of work from beginning to end	0.760				
Once I start a task; I have to finish	0.872				
I never work just do half and then assign others	0.804				
The work shows me with information about my performance	0.893				
I have freedom to decide how I perform assigned tasks	0.689				
I can set own schedule for completing assigned tasks	0.902				
Only when my job gets done, other jobs can be completed	0.926				
My job is always to get the attention of co-workers	0.845				
My job is an integral part of the organization.	0.765				
Supervisor provides me with constant feedback about my activity	0.754				
The work shows me with information about my performance	0.863				
I can timely know whether my job is efficient	0.721				
Co-worker support		0.715	0.917	0.817	0.909
Colleagues provide "helpful information or advise"	0.786				
Colleagues provide "sympathetic advice and understanding"	0.684				
Colleagues provide "clear and helpful feedback".	0.887				
Colleagues provide "practical assistance".	0.704				
Employee work engagement		0.707	0.932	0.836	0.905
Teacher....is very dedicated to his work "he comes to class on time to teach	0.747				
Teacher puts a great deal of efforts to cover subject syllabus and revision	0.815				
Teacher.... cares about the fate of this school "prepares prior to teaching"	0.822				
Teacher.... devotes much time to his work "he is always present for work"	0.806				
Teacher.... likes and enjoys teaching "he gives performance feedback timely"	0.658				
Teacher works extra hours even though nobody asks him to do so "is concerned with learning"	0.710				
Teacher.... has mastery of the subject "he makes sure that the class is active and lively"	0.805				
Teacher.... takes time to help students learn "he uses simple language"	0.764				

Source: Table by the author

3.4. Data analysis

This section discusses the data analysis techniques employed in the study. It mentions the use of structural equation modelling (SEM) in Analysis of Moment Structures (AMOS) 21 software to test the hypotheses and analyse the relationships between variables. Both descriptive and inferential statistics were performed as data analysis procedures. Descriptive analysis involved the assessment of the mean and standard deviations, as suggested by Pallant (2020). Inferential statistics involved SEM, an advanced statistical technique used to study the relationships among multiple variables in a dataset simultaneously (Hair et al., 2010). The SEM allowed for the examination of the mediating role of co-worker support in the relationship between job characteristics and work engagement. The simultaneous analysis of multiple independent variables and dependent variables revealed the possible interrelationship between the nature of the job and teachers' engagement in teaching when mediated by co-worker support. Such analysis was important for determining their statistical inferences.

4. Results and discussion

4.1 Confirmatory factor analysis (CFA)

The study utilized confirmatory factor analysis (CFA) to examine the relationships between job characteristics, co-worker support, and employee work engagement. Structural equation modelling (SEM) with AMOS version 21 was used. The study carried out CFA in order to test how well the measured variables represent the construct and to specify the number of factors required in the data and which measured variables are related to which latent variables, as suggested by Ghadi et al. (2012) and Verdugo et al. (2016). Hence, constructs whose loadings are below 0.5 are not retained for further analysis and inferences (Kline, 2011). As can be seen in Figure 2, all the construct loadings are greater than 0.5. This statistical technique allowed the researchers to validate the measurement model and assess the reliability and validity of the constructs under investigation. Accordingly, CFA is considered a multivariate statistical procedure utilized to assess the factor structure of a set of observed variables for the purpose of indicating whether a specific measurement theory can be confirmed or rejected (Ghadi et al., 2012).

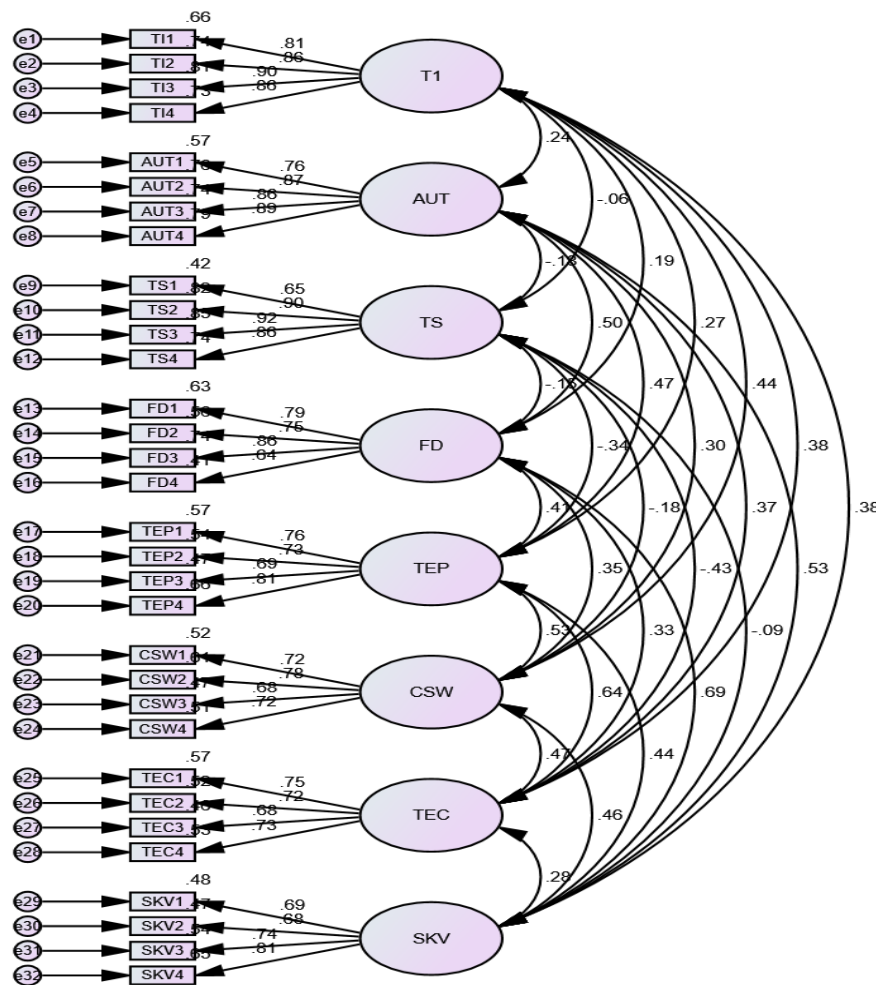


Figure 2. CFA for study's constructs

Source: Figure by the author

Moreover, the current study applied a two-stage structural equation modelling technique to assess the goodness of fit of the measurement and structural models before the study hypotheses were tested. The aim was to recognize whether there is a relationship between observed variables and unobserved constructs. This method is essentially valuable in assessing the extent to which the proposed measurement items effectively and accurately capture or measure a given study construct or variable (Kline, 2005a). The results presented in Table 2 indicate a satisfactory CFA model fit because of the statistics obtained: chi-square (χ^2) = 738.687 ($p = 0.000$, $df = 436$); $\chi^2/df = 1.694$, which is below the recommended model fit of 3.0 (Hooper et al., 2008). Goodness of Fit Index (GFI) = 0.894; Adjusted Goodness of Fit Index (AGFI) = 0.872; Normed Fit Index (NFI) = 0.900; Comparative Fit Index (CFI) = 0.956; Incremental Fit Index (IFI) = 0.956, which are above the recommended value of 0.9 (Schermelleh-engel

& Moosbrugger, 2014); and the Root Mean Error of Approximation (RMSEA) = 0.043, below the recommended threshold of 0.08 (Hooper et al., 2008; Kline, 2005a).

Table 2. Model fit indices

Measure	Estimate	Threshold	Interpretation
CMIN	738.687	--	--
DF	436	--	--
CMIN/DF	1.694	Between 1 and 3	Excellent
GFI	0.894	>0.90	Good
AGFI	0.872	>0.90	Good
IFI	0.956	>0.95	Excellent
CFI	0.956	>0.95	Excellent
RMSEA	0.043	<0.06	Excellent

Source: Table by the author

4.2 Testing reliability and validity of instruments

This study conducted a test of composite reliability (CR) and average variance extracted (AVE) to portray the validity and reliability of the instruments as suggested by Kline (2005). The CR and AVE values, presented in Table 1, were all above the recommended threshold of 0.7 and 0.5, respectively, for all the constructs as recommended by Zainudin et al. (2019). Likewise, the items had a square multiple correlation above the threshold of 0.2 (Kline, 2005b). Hence, data analysis activity proved that the convergent validity of the construct was within an acceptable range. Furthermore, the results shown in Table 1 revealed that Cronbach's alpha coefficients for the measurement scale were higher than the suggested value of 0.7 (Tavakol & Dennick, 2011). This means satisfactory scale reliability was met (Hair et al., 2010). In addition, the results of the measurement model analysis indicated in Table 1 adhere to the discriminant validity test proposed (Fornell & Larcker, 1981). According to Fornell and Larcker (1981), high discriminant validity is reached if the square root of the AVE is higher than the correlation coefficients amongst the variable constructs. The results in Table 3 indicated that the square root of the AVE was truly greater than the correlation coefficient among the variable constructs, ascertaining that good discriminant validity was achieved.

Table 3. The square root of AVE and inter-construct correlation

Variable/Statistics	CR	AVE	MSV	MaxR(H)	JC	CWS	EWE
JC	0.917	0.735	0.190	0.922	0.857		
CWS	0.909	0.715	0.278	0.917	0.236	0.845	
EWE	0.905	0.707	0.184	0.932	0.065	0.177	0.750

Source: Table by the author

4.3 Structural model, hypothesis testing and discussion of findings

The study assessed how JC influence EWE when moderated by CWS. The Hayes Process was used to establish the moderation effect (Hayes, 2018; Igartua & Hayes, 2021). From the findings in Table 4, the results show that there is a significant and positive relationship between JC and EWE ($\beta = 0.478$, $p = 0.001$). This implies that the more the job is inviting and rewarding, the more engaged the job holder is. Thus, the findings support the first hypothesis. These findings are in line with previous research indicating that jobs that create a sense of autonomy are rewarding and make job holders satisfied, and as a result, they become engaged in the job (Nalla et al., 2017; Vera et al., 2016.; Voet & Walle, 2015). Accordingly, a job can give employees meaning if it has a tangible effect on the happiness of job incumbents at the workplace (Hackman & Oldham, 1976; Muwanguzi et al., 2022; Sorsa, 2017). In the context of this study, teaching as a work offers the job incumbents a meaning of what they do and why they do it. To every teacher perceiving his job as meaningful, such that the job features are appealing, make them passionate and committed to the job, thereby improving the standard of living. Furthermore, education, which is the fruit of teaching and learning, has a crucial role in the economic development of a country (Heri & Mkulu, 2022; Paschal & Mkulu, 2020).

However, findings indicate that the influence of CWS on EWE is not significant ($\beta = 0.217$, $p = 0.067$). This suggests that, when considering CWS as a standalone variable, it cannot reliably predict EWE. Consequently, the hypothesis suggesting a direct relationship between CWS and EWE (hypothesis two) is not supported. Despite previous studies indicating positive outcomes associated with CWS, such as reducing job stress and anxiety and increasing presenteeism (Dubreuil et al., 2014; Yang et al., 2016), the findings indicate a positive and significant moderation effect of co-worker support on the relationship between JC and EWE (JC * CWS) ($\beta = 0.305$, $p = 0.025$). It implies that the interaction between job

characteristics and co-worker support results in job holders' engagement with their jobs. Hence, job holders need support from co-workers, like getting advice on how well their duties can be executed or on new ways of doing the job. As a result, job holders become motivated to execute their job. Similarly, CWS has been found to influence employee job performance (Koseoglu et al., 2018). Also, previous studies have indicated that the more individual employees are supported by their colleagues, the less they experience job stress and anxiety, and consequently, they attain efficiency in the job (Kokoroko & Sanda, 2019; Yang et al., 2016).

Table 4. Moderation Analysis Summary

Variables/Statistics	β	t-statistics	p-values	LLCI	ULCI
Intercept	0.324	2.517	0.013	0.043	0.605
JC	0.478	3.652	0.001	0.198	0.758
CWS	0.217	1.834	0.067	-0.012	0.45
JC * CWS	0.305	2.291	0.025	0.046	0.564
R ²	0.541				
Δ R ²	0.121				

Notes: $F(3, 96) = 28.416, p < 0.001$

Source: Table by the author

5. Conclusion and implications

5.1 Conclusion

The purpose of conducting this research was to assess the moderating effect of CWS on the relationship between job characteristics and employee work engagement. Based on the results of this study, it can be concluded that JC has a positive and significant relationship with EWE. However, findings indicate an insignificant relationship between CWS and EWE, presenting a positive and significant moderation effect of CWS on the relationship between JC and EWE. Like any other employee in different sectors, teachers need this kind of support from their colleagues to make them engaged in their teaching roles. Hence, the current study creates a contextual connection model for JCM, CWS, and EWE in Tanzanian secondary schools. By improving the job features and having sufficient support from colleagues, teachers will be engaged in their teaching roles.

5.2 Implications of the study

The study has implications both for theory and management in the following ways: To the theory, the study aligns with the JCM, as it emphasizes that job characteristics play a crucial role in promoting positive outcomes such as relationship building with colleagues, teamwork, and retention within the organization. By demonstrating that inviting and job features contribute to employee work engagement and retention, the study reinforces the principles set forth by Hackman and Oldham (1976, 1975) in their development of the JCM. Moreover, the study adds to the ongoing discourse on the importance of job crafting in enhancing employee work engagement, in line with previous research by Demerouti and Bakker (2011) and Gloriana et al. (2020) suggesting that employees who are given autonomy in shaping their roles and tasks tend to exhibit higher levels of engagement, underscoring the importance of job crafting initiatives in organizational settings. Again, the findings contribute to the understanding of co-worker support's role in fostering employee work engagement, consistent with previous research by Makera et al. (2019) and Vera et al. (2016). They highlighted the significance of supportive relationships among co-workers in promoting passion and commitment to the job, indicating that social dynamics within the workplace can significantly influence employee engagement levels.

On the other hand, the managerial implications of the study are threefold: Managers in the education sector should prioritize fostering a supportive atmosphere among teachers and encouraging mutual assistance and collaboration. This can create a work environment where employees feel valued and empowered, leading to increased job satisfaction and engagement. Second, managers should ensure that job roles are designed to offer sufficient autonomy and opportunities for feedback. This approach can help alleviate feelings of anxiety and stress among employees, fostering a sense of control and ownership over their work, which in turn enhances engagement and job satisfaction. Third, managers should address factors such as anxiety, stress, and self-rejection within the workplace. This can be done by creating an environment where these negative experiences are minimized. Managers can also promote a more positive and engaging workplace culture, ultimately improving employees' well-being and performance.

5.3 Limitations and suggestions for future studies

Despite its contributions, this study has some limitations that should be acknowledged. First, the sample size was limited to secondary school teachers in Tanzania, which may limit the generalizability of the findings to other contexts or occupations. Second, the data was collected using self-report measures, which could be subject to response bias. Third, the study focused on the moderation role of co-worker support, but other factors that could influence work engagement were not examined. For future research, it is recommended to replicate this study with larger and more diverse samples to enhance the external validity of the findings. There is a need to extend the investigation of the relationship between CWS and EWE. Moreover, CWS can be linked with organizational factors like leadership style, job crafting, and work-life balance to see how far it may impact EWE. This is because work-life balance, job crafting, and leadership style have been proven to have a positive relationship with employee performance (Akbar et al., 2022; Amegayibor, 2021; Amran et al., 2022; Ansari et al., 2015; Melayansari & Bhinekawati, 2020; Santigie et al., 2024). Additionally, incorporating objective measures of work engagement and utilizing longitudinal designs could provide a more comprehensive understanding of the relationships between job characteristics, co-worker support, and work engagement over time. Furthermore, investigating other potential moderators and mediators in the relationship would contribute to a deeper understanding of the factors influencing work engagement in different work settings.

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