

Mediating role of work engagement in the relationship between supervisor support and turnover intention among construction workers

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Abstract

Purpose – While existing research has explored the association between supervisor support and turnover intention among construction workers, there is a notable gap in the literature concerning the potential mediating role of work engagement in elucidating this relationship, warranting further investigation. The paper, hence, aims to examine the mediating role of work engagement in the relationship between supervisor support and turnover intention among construction workers.

Design/methodology/approach – Based on the quantitative research method, the hypothesis was tested. The data were collected from 144 construction professionals using a structured questionnaire. Observed variables were tested using confirmatory factor analysis, and the mediating role relationship was validated using hierarchical regression.

Findings – The outcome of this study shows a significant positive impact of work engagement and supervisor support on employee turnover intention. The study further showed that work engagement plays a mediating role in the connection between supervisory support and the intention to turnover and improve project and business performance. Turnover intention, on the other hand, negatively affects project and organizational performance.

Practical implications – By enhancing employee work engagement and perceptions of supervisor support, the findings of this study may aid construction organizations in making better judgments regarding the likelihood of employee turnover. The effectiveness of the project and the organization will likely be greatly impacted.



Originality/value – The results of this study provide supporting evidence and advance efforts at reducing employee turnover intention through work engagement and supervisor support in improving project and organizational performance.

Keywords Turnover intention, Supervisor support, Work engagement, Workers, Construction

Paper type Research paper

1. Introduction

The ability to work effectively and efficiently is required for employees to help their organization achieve its desired objectives and goals (Ryba, 2020). Every firm must keep its employees by putting forward novel ideas or offering structural assistance to meet and satisfy their needs. But when workers are unhappy with their jobs or how the company treats them, they frequently quit permanently (Inayat and Jahanzeb Khan, 2021). In the construction industry, a project's successful completion is achieved using various management strategies that rely on human involvement. The project must be finished by the specified completion date, and all construction-related disciplines and stakeholders involved must collaborate. Regardless, the construction industry's personnel retention is a major issue (Dainty *et al.*, 2000). The industry has a high rate of labor turnover, which can have positive and negative effects on the performance and productivity of construction companies. Construction personnel are among the professionals who report a high level of job-related stress and burnout through stressors including, but not limited to, time constraints, unfair rewards, improper treatment, and inadequate safety work training, which make workers feel a lack of support from their organization (Enshassi *et al.*, 2015). The high construction turnover intention rate is reportedly linked to factors such as perceived alternative employment opportunities, fringe advantages, low pay satisfaction (Brown *et al.*, 2015), and reduced employee engagement (Nichols *et al.*, 2016).

To minimize employee turnover in various industries across the world, the support of supervisors is critical. As supervisor support is a job resource (Ling Suan and Mohd Nasurudin, 2016), it could aid in resolving the issues employees encounter at work through help and direction (Garg and Dhar, 2017). Empirical studies by (Qaisar Danish *et al.*, 2019; Park and Johnson, 2019) also emphasize that highly engaged workers are more likely to stay with their employers. The concept of work engagement has become a crucial management tool for supervisors in almost all industries, where construction is no exception. With supervisors encouraging personal initiatives and innovativeness in dealing with emerging challenges, the self and professional fulfillment of construction workers (CWs) will likely decrease turnover intentions (Karatepe *et al.*, 2018). In addition, engaged employees view work as challenging rather than demanding or stressful. They tend to be enthusiastic about what they do and filled with high levels of positive energy, which causes them to concentrate on finishing their work and subsequently makes them enjoy their general responsibilities in the organization (Othman *et al.*, 2019). Researchers are eager to understand the role of supervisor support and work engagement in the turnover intention of construction professionals.

Many researchers have therefore investigated the linkage between the support of supervisors and CWs' turnover intention to inform national and firm-level policy (Pattnaik and Panda, 2020; Zhang *et al.*, 2015; Gaffney, 2022). Nonetheless, these studies report contradictory findings. While supervisor support is deemed to significantly affect the turnover intention of CWs (Pattnaik and Panda, 2020), other studies report no significant relationship between the two constructs (Newman *et al.*, 2011; Qaisar Danish *et al.*, 2019). It is, therefore, evident that some possible variables or constructs contextually mediate the relationship. It is, therefore, important to note that work engagement has been theorized to minimize the intention to leave an organization (Malik and Khalid, 2016). While this might be

true, construction work engagement is based on several factors such as remuneration, proper working conditions, among others, which are generally unique within geographical environments. Thus, it is imperative to undertake this research within a developing nation context where conditions of engagement, supervisor support and turnover intentions are rapidly changing due to the exigencies of current economic circumstances. With a strong advocate that the outcome of this research will help improve the construction industry's engagement to support the system of construction workforce turnover intentions, this study further highlights important pathways for reducing turnover in labor-intensive industry. This study is conducted with a view to provide effective insights into the potential need for construction workers' engagement to manage turnover intention using Ghana as a case study. This study, hence, aims to investigate whether the association between perceived supervisors' support and the turnover intention of construction professionals requires the mediating role of work engagement.

2. Development of the hypothesis

The underpinning theory for the study is the social exchange theory. According to the Social Exchange Theory, social relationships are built on the exchange of resources, including assistance, knowledge, and acknowledgment (Blau, 1964). This idea holds that people are driven to participate in social interactions when the advantages outweigh the drawbacks. Employees trade their abilities and efforts for rewards, including pay, benefits, and recognition at work (Cropanzano and Mitchell, 2005). The perceived fairness of the exchange, which is based on the balance between the resources transferred and the expectations of both parties, affects the quality of the relationship between employees and their supervisors (Cropanzano and Mitchell, 2005).

The level of support that managers give their staff members on an emotional, practical, and informational level is referred to as supervisor support (Eisenberger *et al.*, 1986). Research repeatedly shows that employee turnover intention across industries, including construction, is inversely correlated with supervisor support (Zhang *et al.*, 2018). The Social Exchange Theory, which contends that employees who view their supervisors as supportive are more likely to engage in positive work behaviors, like job engagement, and less likely to suffer negative work outcomes, like desire to quit, can explain this negative link (Lei *et al.*, 2023). According to Schaufeli (2013), work engagement is the level of an employee's physical, cognitive, and emotional involvement. Work engagement has been found to be adversely correlated with turnover intention and positively correlated with organizational commitment, job performance, and job satisfaction (Bakker and Demerouti, 2008). According to the Social Exchange Theory, work engagement benefits from the exchange connection between employees and their managers (Blau, 1964). Because they believe their supervisors value and appreciate their efforts, employees who see their managers as supportive are more likely to feel involved in their work.

The received benefits employees receive in the form of supervisor support tend to increase workers' level of engagement in line with their feeling of obligation to the organization and decrease turnover intention (Karatepe, 2011). Thus, this study relies on the Social Exchange Theory (SET) theory to hypothesize the association between supervisor support, work engagement and construction professionals' turnover intention. Employees typically perceive supervisor support as a measure of how much their managers value their contributions and are concerned about their interests, welfare, and well-being (Anjum and Naqvi, 2012). The supervisor is responsible for leading and motivating the employees to perform better in the organization by creating an environment that stimulates a positive attitude. On the other hand, work engagement has been characterized in various ways. Workers who are engaged put their physical, cognitive, and emotional efforts into their work

and feel pushed to work for a difficult objective by bringing their energy to work (Maslach *et al.*, 2001). The outcomes of CWs' engagement in their work are higher levels of contagious personal initiative and decreased worker turnover intention (Karatepe *et al.*, 2018). Turnover intention is also one's free will decision to stop employment by the current employer. It has been considered a final move for employees to decide to leave (Toren *et al.*, 2012). It is increasingly vital to organizations due to its influence on stability and productivity (El-Sakka, 2016). Losing skilled staff through turnover leads organizations to encounter substantial costs associated with recruiting, training, and other hidden employment costs (Osman *et al.*, 2016).

2.1 Supervisors' support and turnover intention

The turnover intention of employees is reported in the extant human resource literature to be influenced by the nature and level of support from supervisors, which eventually affects employees' perception and attitude towards an organization (e.g. Khan *et al.*, 2020; Purba and Fawzi, 2019). Empirically, several studies by researchers such as Purba and Fawzi (2019), Worku (2015), Kuntardina (2017), and El-Aziz *et al.* (2017), among others, reported that supervisor support diminished CWs' turnover intentions and minimized their proclivity to leave. Additionally, a study by Khan *et al.* (2020) revealed that supervisor support explained significant variance in bank employees' quitting intentions. Moreover, Qaisar Danish *et al.* (2019) found that supervisors' support in training services and motivation strongly influences employee turnover intention. Fukui *et al.* (2019) also reported the positive effects of supervisory support on reduced turnover intention through reduced emotional exhaustion. Supervisor support tends to minimize emotional exhaustion and enhance employees' sense of personal accomplishment, hence minimizing any harbored turnover intention (Yeun and Kim, 2015). A high level of support from the supervisor to the employee at the workplace would make them less likely to leave the organization than an employee with less supervisor support (Ilyas *et al.*, 2020). Generally, employees' perception that supervisors provide emotional and instrumental support in the form of helping to resolve both work and non-work-related problems and caring for the general well-being of employees promotes their connection with their organizations (Newman *et al.*, 2011) and eventually minimizes any form of intention to leave. Construction professionals with greater perceived supervisor support experience more positive and less negative job outcomes, including less occupational stress than workers with less perceived supervisor support (Debrah, 2007). Supervisor support enhances the satisfaction and commitment of construction professionals (Qureshi and Aleemi, 2018) and minimizes turnover intention. Good supervisory support to the construction team is a critical source of comfortable feeling and motivation to learn through training, which eventually enhances staff skills and capacity. The increasing self-fulfillment of the team will, therefore, minimize any form of intention to leave. Thus, this study hypothesizes that.

H1. Supervisor support negatively influences the turnover intention of CWs.

2.2 Supervisors' support and work engagement

The construction industry often delivers services to clients and project stakeholders through design and construction personnel teams. These teams are headed by supervisors whose efforts and actions significantly influence the output of individuals within the team. The support received from supervisors goes a long way to augment employees' work engagement. In the construction industry, physical exhaustion can possibly be minimized through a higher level of supervisor support. There is often a limited investment of employees' resources when there is the perception of absence or a low level of supervisor

support. However, supervisor feedback motivates employees to learn new abilities and create the required action plans (Hobfoll *et al.*, 2000). Several studies in the extant literature empirically supported the perceived higher level of work engagement through supervisor support (Choo and Nasuridin, 2016; Mohamed and Ali, 2016; Heyns *et al.*, 2021). Researchers have conducted various surveys to assess work engagement and supervisor support, such as the survey of 1,343 full-time hourly retail workers in the USA. Swanberg *et al.* (2011) survey of 438 customer-contact employees in upscale Malaysian hotels; Choo and Nasuridin (2016) survey of 109 employees at lower and middle managerial levels of Malaysian telecommunication companies; Mohamed and Ali (2016), a study of 386 Indian call-center employees. Thus, all the studies reported a positive influence of supervisor support on employees' work engagement. In a more recent study that surveyed 253 employees of a South African mining organization, Heyns *et al.* (2021) reported that employee perception of improvement in supervisor support enhances work engagement amongst retained employees. These findings highlight that supervisor support fosters greater employee work engagement. The social exchange theory emphasizes that employees whom supervisors highly support often feel indebted and, hence, are morally obliged to reciprocate through increased work engagement (Cropanzano and Mitchell, 2005). Based on the numerous reviewed studies in the extant work engagement literature, this study hypothesizes that.

H2. Supervisor support is positively associated with work engagement.

2.3 Work engagement and turnover intention

Work engagement refers to positive job effects and provides a sense of fulfillment and a positive state of mind (Sonnentag, 2003). As a result, engaged employees are more likely to get unduly attached to their employers, which lowers their intentions to leave (Schaufeli and Bakker, 2004). Previous studies indicate low work engagement tends to stimulate higher employee turnover intention (Cao *et al.*, 2020; Edwards-Dandridge, 2019; Syed Ghulam *et al.*, 2019). Work engagement is reported to affect CWs' turnover intention directly or indirectly (De Simone *et al.*, 2018). Shuck and Reio (2014) showed a strong association between engagement and turnover intentions. Work engagement produces an experience that is positive and filled with fulfillment, with a focus on maintaining good health and making success in one's career (Sonnentag, 2003; Schaufeli and Bakker, 2004). Employees with pleasant experiences and feelings are more likely to believe in their employers, produce quality work, and be unwilling to quit. Employees who experience these favorable work-related emotions display better work outcomes, have a higher regard for their managers, and have fewer intentions to leave their jobs (Saks, 2006). Workers highly engaged with their jobs are physically and emotionally absorbed and rarely have time to have negative thoughts such as quitting intentions (Saks, 2006). Besides, highly engaged workers feel obliged to repay their organizations with long stints of service and are likely to stay with the organization. Based on the reviewed literature on the linkage between work engagement and the turnover intention of employees, this study hypothesizes that.

H3. Work engagement is negatively associated with CWs' turnover intention.

2.4 Mediating role of work engagement

To accomplish their goals and objectives, organizations need employees who are highly engaged in their work. Schaufeli and Bakker (2004) state that work engagement is a positive work-related state of mind. Other literature on work engagement also reveals positive behaviors and attitudes towards work (Bakker *et al.*, 2008). Previous studies have indicated that supervisor support positively influences work engagement (e.g. Swanberg *et al.*, 2011;

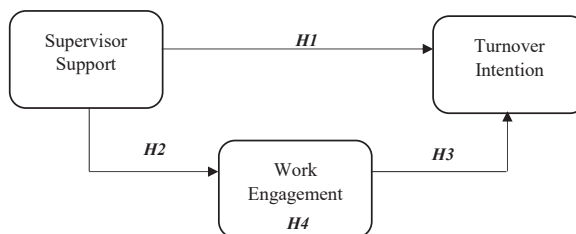
Choo and Nasurdin, 2016; Pattnaik and Panda, 2020), which also negatively affects the turnover intention of employees (e.g. Cao *et al.*, 2020; Sheehan *et al.*, 2019). These established relationships provide adequate evidence of the potential mediating role of work engagement in the linkage between supervisor support and employees' turnover intention. According to a study by Yeosock (2020), perceived supervisor support was negatively correlated with turnover intention through job engagement, mediating the link between perceptions of supervisor support and turnover intention. Work engagement is therefore seen as a mechanism that links perceived supervisor support to turnover intention, suggesting that workers get involved out of a sense of duty to perceived supervisor support, which reduces their intention to quit the company. Employees are typically compelled to become more engaged when they feel their employer has invested in and supports them through human resource development techniques, which lowers the intention to churn over staff. Therefore, supervisor support and upholding the existing psychological contract minimizes intents to leave the company through job engagement, which acts as a middleman. Hence, it may be assumed that.

H4. Work engagement mediates the relationship between supervisor support and CWs' turnover intention.

From the social exchange theory, the demand of the construction industry exposes these CWs and stakeholders to physical and psychological distress. The experienced exhaustion from the job requires an equally adequate level of resources for construction professionals to deliver quality end products of construction for their clients. The offered resources to construction professionals in the form of supervisor support are reported to stimulate positive work attitudes and behavior by increasing work engagement. Thus, the social exchange theory emphasizes that CWs, like many other workers, often feel the need to reciprocate in the form of work engagement and willingness to stay with the company due to the offered support in the form of emotional, instrumental, role modeling and work creativity. Therefore, the available research and the existing theories emphasize the mediating role of work engagement in the association between supervisor support and the turnover intention of employees (Pattnaik and Panda, 2020; Yeosock, 2020). Conclusively, the discussed relationship between supervisor support, work engagement and turnover intention and the associated developed hypotheses based on theory and empirical evidence is shown in Figure 1.

3. Research method

Due to its reliance on the positivist worldview, logical reasoning, and standardized questionnaires for data collection and analysis, this research is widely recognized as being quantitative. Hence, two strategies were used in this investigation, which produced the



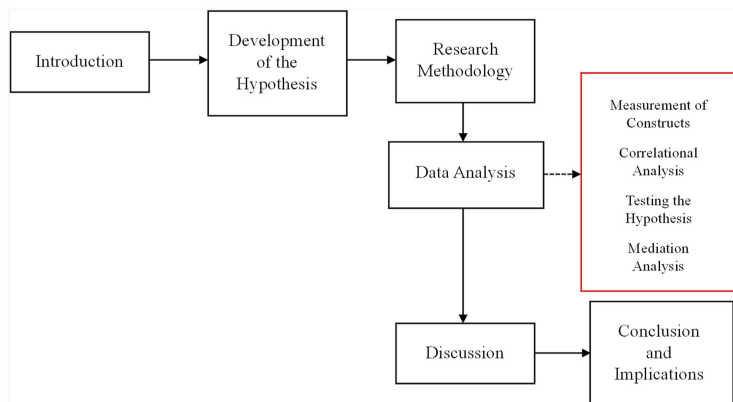
Source(s): Authors' own work

Figure 1.
Framework of supervisor support, work engagement and turnover intention

findings. The first strategy involved reviewing a wide-ranging body of literature on the phenomenon and testing it by creating a prototype/pilot survey with experts on the subject. The study used a quantitative research methodology to expand information from a literature review to create a structured questionnaire as a flow chart presented in [Figure 2](#).

The population of the study was all major stakeholders in construction, planning, architectural, management and consulting organizations working in the Ghanaian building sector. This study’s population was quantity surveyors, construction managers, project managers, architects, structural engineers, and works supervisors, among other industry stakeholders. The questionnaire was initially evaluated amongst six project teams in Ghana using a pilot survey. This pilot survey was carried out to ascertain the opinions of a few chosen professionals on the variables found in the literature. Based on purposive and snowballing sample procedures, ten professionals were considered; they were required to remove, add up, and verify the validity of all the identified variables and their relationship to the building sector. These experts were chosen based on a set of standards created in response to investigations by [Rogers and Lopez \(2002\)](#) and [Aigbavboa et al. \(2014\)](#), which recommended at least two standards. But there is no agreement on how many requirements there should be. The researcher outlines the selection criteria to ensure reliable results. The quality and depth of the selection criteria at the phase ultimately influenced the study’s trustworthiness. The following criteria served as the basis for the selection process: understanding of the Ghanaian market and expertise in supervising construction projects. The minimum requirements were established as having a degree in management or supervision, professional credentials in management, more than five years of relevant job experience, and willingness to engage in the study.

The second approach was modifying the results of the first approach to developing a survey (questionnaire). Feedback from the pilot survey was later merged into the final questionnaire. The questionnaire was in four sections, dealing with three main areas complemented by respondents’ backgrounds: Supervisor Support, Work Engagement, and Turnover Intention. As stated, the questionnaire was administered to construction workers across Ghana on building projects. The variables adopted on each construct for the survey were based on the following in [Table 1](#). These multi-dimensions of perceived supervisor support were based on the developed measures of [Hammer et al. \(2007\)](#) and several previous studies ([Clark, 2001](#); [Cole et al., 2006](#)). The observed variables of perceived supervisor support were measured using a five-point Likert scale ranging from “strongly disagree” (1) to



Source(s): Authors’ own work

Figure 2.
Flowchart of research methodology

S/N	Measurement items/statements
	<i>Perceive supervisor support</i>
PSS1	My supervisor cares about my opinions
PSS2	My work supervisor really cares about my well-being
PSS3	My supervisor strongly considers my goals and values
PSS4	My supervisor shows very little concern for me
PSS5	My supervisor takes time to learn about my personal needs
	<i>Work engagement</i>
WE 1	At my work, I feel bursting with energy
WE2	At my job, I feel strong and vigorous
WE3	I feel like going to work when I get up in the morning
WE4	I'm passionate about what I do
WE5	I'm inspired by my job
WE6	I am pleased with the work I have accomplished
WE7	While I'm working hard, I feel happy
WE 8	I'm totally focused on my task
WE9	While working, I tend to become irrational
	<i>Turnover intention</i>
TI 1	I'm soon going to depart this company
TI 2	Within the next six months, I intend to leave this company
TI 3	I'm going to leave this company as soon as I can
TI 4	I have no immediate plans to leave this company
TI 5	It's possible that I'll soon depart this company

Source(s): Authors' compilation

Table 1.
Observed variables for the survey

“strongly agree” (5). The nine measurement items of work engagement were based on the multi-dimensions of work engagement in previous studies (Burns, 2016; Schaufeli, 2012). The observed variables of work engagement were measured using a five-point Likert scale ranging from “Never” (1) to “Always” (5). The observed variables of turnover intention were measured using a five-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (5). The turnover intention was measured using the turnover intention scale developed by Roodt (2004) in an unpublished document and later refined and published by Jacobs and Roodt (2008). (2). The questionnaire was self-administered through face-to-face sessions.

The respondents were chosen using a convenience sampling strategy. The study used this non-probability sampling technique to decide on the sample size because it was difficult to estimate the population size. Fugar and Agyakwah-Baah (2010) explain that convenience sampling occurs when the researcher selects the examples that are the most accessible and convenient. The recommendation that a sample size of 30 for any category might be regarded as representative led to the choice of 170 as an appropriate sample size for the study (Ott and Longnecker, 2001; Vehovar *et al.*, 2016). Of the 170 questionnaires distributed, 144 were retrieved, representing a high response rate of 84.7%.

According to the respondents' demographic information, most respondents (33.3%) have 8–13 years of work experience, and the majority (54.2%) have master's degrees. With over 50% of the population having more than 7 years of experience and 0.7% having a diploma, the kind and quality of the information provided cannot be compromised, ensuring the validity of the data acquired.

3.1 Data analysis

The data were analyzed utilizing confirmatory factor analysis and multiple regression with the LISREL 8.50. and IBM SPSS Statistics Version 20, respectively. The main scales of the study were measured through confirmatory factor analysis (CFA) in testing the reliability

and validity of the measures. The conventional practice of the unidimensional process of measuring individual constructs was first followed to minimize the possibility of a minimum sample size to parameter ratio violation (Cadogan *et al.*, 2006; Ikuabe *et al.*, 2023). The purpose of the CFA process was mainly to identify and eliminate any problematic observed variable in the measurement of all constructs. In addition, to validate the hypothesis, hierarchical regression was used. This was adopted to help validate the mediating effect of work engagement on the connection between construction workers' intention to quit their jobs and supervisor support. Hierarchical regression is assumed because it helps evaluate the contributions of predictors above and beyond previously entered predictors as a statistical control and for examining incremental validity (Lewis, 2007).

3.2 Correlational analysis

The first rotation matrix was used to remove unnecessary variables from the model for testing the hypothesis. The strength of the association between the constructs was then assessed using correlation analysis (Jinyuan *et al.*, 2016). Testing the constructs or variables to be included in the multivariate analysis required the bivariate correlational analysis. Table 2 displays the outcome. From Table 2, construction workers' work engagement level was strongly connected with perceived supervisor support ($r = 0.296, p = 0.01$). Therefore, raising supervisor support in the construction sector is linked to increased work engagement. However, there was a negative correlation between turnover intention and perceived supervisor support ($r = -0.178, p = 0.05$). Consequently, a decrease in workers' intentions to leave their jobs relates to increased perceived supervisor support. Additionally, there was a negative correlation between work engagement and workers' intentions to leave their jobs ($r = -0.230, p = 0.01$). Hence, increasing work engagement is linked to a decrease in workers' intentions to quit their jobs.

3.3 Measurement of constructs

The dimensions assessed in the first-order measurement process were perceived supervisor support, work engagement and turnover intention. The unidimensional measurement process utilized 19 observed variables, but 13 were retained during the CFA process. The second order, which was the full model, measured all the constructs as a single model. Out of the total 13 observed variables retained in the unidimensional process, 11 were eventually retained in the multidimensional CFA process. The factors loadings, the associated t-values, and the validity and reliability test results of the retained observed variables in the full or multidimensional model are presented in Table 3.

The significant and positive factor loadings of the observed variables confirm convergent validity. With the average variance extracted (a measure of discriminant validity) exceeding 0.50, the composite reliability exceeding 0.60, and the alpha reliability exceeding 0.70, the results of the models were all deemed acceptable (Bagozzi and Yi, 2012; Ikuabe *et al.*, 2022). The shared variances between constructs were smaller than the average variances extracted, indicating that the discriminant validity was satisfactory (Fornell and Larcker, 1981).

Construct	1	2	3	Mean	Std. dev
1 Perceived supervisor support	1.000			3.64	0.91
2 Work engagement	0.296**	1.000		4.29	1.29
3 Turnover intention	-0.178*	-0.230**	1.000	2.53	1.11

Note(s): ** & * implies significant correlation at 0.01(1%) & 0.05(5%) levels respectively (two-tailed)

Source(s): Authors' own work

Table 2. Correlation and descriptive statistics

Code	Measurement items	Loadings (t-values)
<i>Perceived supervisor support (CR = 0.844; AVE = 0.645; CA = 0.841)</i>		
PSS1	My supervisor cares about my opinions	0.83 (9.76)
PSS2	My work supervisor really cares about my well-being	0.86 (Fixed)
PSS3	My supervisor strongly considers my goals and values	0.72 (8.79)
<i>Work engagement (CR = 0.913; AVE = 0.680; CA = 0.911)</i>		
WE2	At my job, I feel strong and vigorous	0.62 (8.64)
WE3	When I get up in the morning, I feel like going to work	0.84 (14.91)
WE4	I am enthusiastic about my job	0.93 (Fixed)
WE5	My job inspires me	0.91 (17.74)
WE7	I feel happy when I am working	0.79 (13.03)
<i>Turnover intention (CR = 0.926; AVE = 0.807; CA = 0.921)</i>		
T11	I intend to leave this organization soon	0.80 (13.78)
T12	I plan to leave this organization in the next six months	0.97 (Fixed)
T13	I will quit this organization as soon as possible	0.92 (19.01)

Note(s): Composite reliability (CR), average variance extracted (AVE), Cronbach's alpha (CA)
Source(s): Authors' own work

Table 3. Measurement of observed variables and constructs

Table 4 good-fit indices of the measured models. The chi-square (χ^2) test evaluated the exact model fit. Additional information on the model fit was provided with several appropriate fit heuristics (Fan and Sivo, 2005; Bagozzi and Yi, 2012). The heuristic fit indices presented in Table 4 were all satisfactory and met the required standards or threshold. In addition to the good-fit indices of the first-order models, the second-order CFA full model, which involved simultaneous measurement of the three constructs, is also presented. The full model converged in a proper solution, as the associated factor loadings were significant and positive with good-fit indices. The full model's chi-square per degree of freedom ($\chi^2/df = 57.87/41 = 1.41$) was insignificant and below the required threshold of 2. The fit heuristics were all acceptable and above the cut-off: as a comparative fit index (CFI), non-normed fit index (NNFI), Goodness of Fit Index (GFI) and the Incremental Fit Index (IFI) indices were above the 0.95 cut-offs. The values of the root mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR) were all above the cut-off of 0.07.

3.4 Testing the hypotheses

The hierarchical regression analytical approach was utilized to test the developed hypotheses of the study as per Richardson *et al.* (2015). Four models were tested to

Order	Model	χ^2	df	χ^2/df	RMSEA	NNFI	CFI	IFI	GFI	SRMR
1st order	Model 1	1.09	2	0.55	0.000	1.02	1.00	1.00	1.00	0.015
	Model 2	9.95	5	1.99	0.080	0.98	0.99	0.99	0.97	0.048
	Model 3	1.59	2	0.80	0.010	1.00	1.00	1.00	0.99	0.031
2nd order	Full model	57.87	41	1.41	0.054	0.98	0.99	0.99	0.97	0.070

Note(s): Non-normed fit index (NNFI), comparative fit index (CFI), incremental fit index (IFI), standardized root mean square residual (SRMR), goodness of fit index (GFI), root mean square error of approximation (RMSEA)

First order scale measurement: model 1 (perceived supervisor support), model 2 (work engagement), model 3 (turnover intention); second order scale measurement: full model of all constructs

Source(s): Authors' own work

Table 4. Goodness-fit indices

evaluate work engagement’s mediation or intervening role. In the analysis, the dependent variable was turnover intention, the independent variable was perceived supervisor support, and the intervening variable was work engagement. As per the study conducted by Pokhariyal (2019), Model 3 tested the direct effect of the intervening variable on the dependent variable. Model 4 tested the effect of the independent and intervening variables on the dependent variables. Model 1 tested the effect of the independent variable on the intervening variable, whereas Model 2 tested the effect of the independent variable on the dependent. The tested models are presented in Table 5.

From Table 5, the summary of Model 1 reported an R-Square of 0.117, which signifies that Perceived Supervisor Support explains about 12% of the workers’ Work Engagement variations. According to statistics, the independent factors were sufficient in explaining the changes in the dependent variable ($F = 1.888, p < 0.01$) (Akossou and Palm, 2013). Model 2 reported an R-Square of 0.013, which signifies that Perceived Supervisor Support explains about 0.13% of the variations in the Turnover Intention of workers. Model 3 reported an R-Square of 0.033, which suggests that Work Engagement explains about 0.33% of the variations in the Turnover Intention of workers. The change in R-Square of 0.02 indicates that Work Engagement explains about 2% of the variation in the Turnover Intention of workers. Statistically, the independent variables adequately explained the changes in the dependent variable ($F = 4.915, p < 0.01$). Statistically, the difference in F-statistics was insignificant, indicating that Work Engagement had no statistical influence on Turnover Intention. The summary of model 4 reported an R-Square of 0.036, which signifies that Perceived Supervisor Support and Work Engagement explain about 0.36% of the variations in the Turnover Intention of workers. The change in R-Square of 0.03 indicates that Work Engagement explains about 3% of the variation in the Turnover Intention of workers (Akossou and Palm, 2013). Using statistics, the independent factors correctly predicted changes in the dependent variable ($F = 2.654, p < 0.01$). The Durbin–Watson values were roughly 2.0, indicating that the stated models did not show any evidence of autocorrelation. The variance inflation factors (VIFs) of the models’ predictors were below the cutoff of 10, which shows that the estimated models lacked multicollinearity.

The direct effect of perceived supervisor support on the turnover intention of employees in the construction sector was evaluated using Model 4. The result showed that perceived supervisor support is negatively associated with the employees’ turnover intention level ($\beta = -0.069, p > 0.05$). However, the tested direct effect of perceived supervisor support on employees’ turnover intention was statistically not significant. Thus, the hypothesized (H1) negative and significant effect of perceived supervisor support on the turnover intention of

Variables	Work eng Model 1	Model 2	Turnover intention Model 3	Model 4	VIF
Constant	2.523 (6.030)***	3.027 (7.943)***	3.203 (10.075)***	3.382 (7.987)***	
<i>Hypothesized</i>					
Perceived SS	0.484 (4.345)***	-0.137 (-1.349)		-0.069 (-0.642)	1.133
Work eng			-0.157 (-2.217)***	-0.141 (-2.215)***	1.133
<i>Diagnostics</i>					
R ²	0.117	0.013	0.033	0.036	
Adj. R ²	0.111	0.006	0.027	0.023	
F-stats (df)	18.88 (1)***	1.821 (1)	4.915 (1)**	2.654 (2)	
D–Watson	1.502	1.772	1.761	1.772	

Table 5.
Hypotheses testing

Source(s): Authors’ own work

employees is rejected. The indirect effect of perceived supervisor support on work engagement was tested using model 1 of Table 5. The result showed that perceived supervisor support is positively and significantly associated with the level of work engagement of the employees ($\beta = 0.484, p < 0.01$). This implies that a unit improvement in the perceived support of supervisors is associated with 0.484 units improvement in the work engagement of employees. Thus, the hypothesized (H2) positive and significant effect of perceived supervisor support on employees' work engagement is accepted. The indirect effect of employees' work engagement on turnover intention was tested using model 4 of Table 5. The result showed that employees' work engagement is positively and significantly associated with turnover intention ($\beta = -0.141, p < 0.01$). This implies that a unit improvement in employees' work engagement is associated with a 0.141 unit decrease in the level of the turnover intention of employees. Thus, the hypothesized (H3) negative and significant effect of work engagement on the turnover intention of workers is accepted.

3.5 Mediation analysis

Table 6 tested the statistically significant intervening role of employee work engagement in the direct effect of perceived supervisor support on employees' turnover intention. The estimated direct effect of -0.069 between perceived supervisor support and the turnover intention of employees was not statistically significant. However, the indirect effect of 0.484 units between perceived supervisor support and work engagement was statistically significant; the indirect effect of -0.141 between work engagement and the turnover intention of employees was also statistically significant. Based on VanderWeele (2016), these results suggest that the effect of perceived supervisor support on the turnover intention of employees decreased to zero (insignificant) with the inclusion of work engagement in model 4 of Table 5, which implies the occurrence of perfect or full mediation of work engagement in the effect of perceived supervisor support on the turnover intention of employees.

Sobel's test tested the statistical significance of the total effect of -0.137 . Table 6 revealed that the full or perfect mediation role of work engagement in the effect of perceived supervisor support on employees' turnover intention was statistically significant. Thus, the final framework or structure of the study is shown in Figure 3.

3.6 Discussion

The results from the regression analysis depict that Perceived Supervisor Support have a positive and significant impact on the Work Engagement of construction workers in Table 7. This shows that when supervisors ignore their subordinates in their work, there will be a decrease in the rate at which the workers engage themselves in the tasks assigned to them, leading to low performance in the construction firm. This supported hypothesis H2: *Supervisor support is positively associated with work engagement*. Perceived Supervisor Support was also seen to influence the Turnover Intention of workers in construction firms negatively. This depicts that when workers feel the support of their supervisors in their

Path	Unstandardized β s			Sobel test statistic	Form of mediation
	Direct effect (D)	Indirect effect (I)	Total effect (D + I)		
PSS \rightarrow WE \rightarrow TI	-0.069	0.484* -0.141 = -0.068	-0.137	1.975**	Full

Note(s): * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, perceived supervisor support = PSS, work engagement = WE, turnover intention = TI

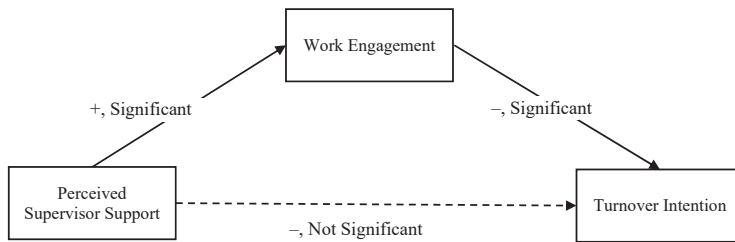
Source(s): Authors' own work

Table 6. Mediation analysis

work, there is a low tendency for them to leave the organization, leading to a common Turnover Intention. This agrees with [Purba and Fawzi \(2019\)](#), who stated that supervisor support diminished construction workers' turnover intentions and minimized their proclivity to leave. Hence the hypothesis, **H1**: *Supervisor support negatively influences the turnover intention of CWs*. The study results further depict that Work Engagement also negatively impacted the Turnover Intentions of workers in construction firms. This means that workers who are adequately engaged to work in the organization get a sense of fulfillment and a positive state of mind, which attaches them to the organization and reduces or eliminates any intention to leave. The hypothesis, **H3**: *Work engagement is negatively associated with CWs' turnover intention*, is also supported.

Additionally, the correlational analysis supported these general hypotheses by showing that the level of work engagement of construction workers was strongly connected with perceived supervisor support. Therefore, raising supervisor support in the construction sector is linked to increased work engagement. However, there was a negative correlation between turnover intention and perceived supervisor support. Hence, a decrease in workers' intentions to leave their jobs relates to an increase in perceived supervisor support by those workers. Additionally, there was a negative correlation between work engagement and workers' intentions to leave their jobs. This shows that increasing work engagement is linked to a decrease in workers' intentions to quit their jobs.

On the other hand, a decrease in worker turnover intention connotes that employees are more committed to their current jobs and organization. Here, construction workers have strong connections and are willing to work with extra effort. Thus, it positively impacts construction workforce engagement and eventually improves supervisor support. This results from increased commitment and collaboration between the employees and supervisors. Notwithstanding, decreased turnover intentions can also have a negative impact on engagement and supervisor support; employees can become complacent and lack challenging activities. At this stage, they feel complete and might not be interested in new ideas or believe in innovations. The research's findings provide stakeholders in the



Source(s): Authors' own work

Figure 3.
Final mediation structure

Path	Hypotheses	Decision
PSS → TI	H1 : Positive and Significant effect of PSS on TI	Not Accepted
PSS → WE	H2 : Negative and Significant effect of PSS on WE	Accepted
WE → TI	H3 : Negative and Significant effect of WE on TI	Accepted
PSS → WE → TI	H4 : WE mediate the PSS and TI linkage	Accepted

Source(s): Authors' own work

Table 7.
Final decisions on the tested hypotheses

construction industry with useful information, emphasizing the value of encouraging supervisor support to raise job satisfaction and, ultimately, reduce turnover intentions and encourage employee retention in this key industry. The underpinning theory of the study holds that people are driven to participate in social interactions when the advantages outweigh the drawbacks. Employees trade their abilities and efforts for rewards, including pay, benefits, and recognition at work (Cropanzano and Mitchell, 2005). The perceived fairness of the exchange, which is based on the balance between the resources transferred and the expectations of both parties, affects the quality of the relationship between employees and their supervisors (Cropanzano and Mitchell, 2005).

4. Conclusion and implications

In addition to starting and finishing a project, construction also runs as a business. Companies and project participants want their projects and enterprises to be executed well. The poor performance of business operations and project performance in the construction sector has been attributed to turnover intention across the literature. Construction companies should always look into ways to improve employee engagement and supervisor support for their projects and overall business performance.

The request for supervisory support and effective worker engagement in organizational activities stems from the perception that the construction industry's workforce turnover intention is crucial to the sector's success. The consequences of turnover intention on organizational performance in the construction industry are evaluated in this section, along with the mediating influence of job engagement on the link between supervisor support and turnover intention.

According to the study, perceived supervisor support significantly impacts work engagement and intention to leave the company. However, the data made it evident that turnover intention had an impact on how a corporation operated and resulted in subpar project execution. The turnover intention was observed to have a more significant overall effect on business operations. These results indicate that construction companies must do well to engage workers who moderate project performance properly. This will primarily affect how well businesses perform. This study suggests that supervisor assistance should be strengthened in operation due to the moderating influence work engagement has on project performance and, largely, company performance.

The intention of workers to leave a construction firm plays a very important function in projects. Understanding work engagement will aid industry participants (clients, suppliers, contractors, and subcontractors) in tracking employee turnover intentions and how it may adversely affect project performance. This will assist players in the sector in creating emergency plans and seeking practical strategies for fostering a sense of engagement and importance among employees to lower the likelihood of employee departures. Also, this study gives the construction sector a good foundation for avoiding the negative effects of turnover intentions by fostering resilience to preserve performance and competitiveness. This study offers perceptions into the aims of the construction industry turnover and steps to improve project performance. The critical application to practice is the recognition of workers' hidden intentions to leave their jobs and strategies to address them with the help of managers and employee engagement.

This study was quantitative and based on the opinions of construction stakeholders in Ghana, notwithstanding its significant contributions to the construction sector's performance (business and project). However, this study's results can be generalized widely because other emerging nations can learn from them. By outlining the crucial mediating role of work engagement in the intricate interplay between supervisor support and turnover intention among construction workers, this study contributes to our understanding

of the construction industry by illuminating the mechanisms by which supportive leadership can reduce turnover intentions through increased employee engagement. Further research might examine how stakeholders in the construction industry perceive worker turnover intentions, how they relate to supervisor support, and how to lessen the impact on the sector.

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Further reading

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