DOI: https://doi.org/10.4038/kjhrm.v20i2.192

Safety Climate as a Driver of Organizational Commitment: Evidence from Sri Lanka's Construction Sector

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Abstract

This study examines the impact of safety climate and its dimensions on employees' organizational commitment using the Social Exchange Theory (SET). Data were collected from 192 front-line technical officers in the Sri Lankan construction industry using the convenience sampling technique during a cross-sectional survey. The sample consisted of 100% male employees, reflecting the current composition of the Sri Lankan construction sector's field workforce. Multiple regression analysis was used to test the hypotheses. The results indicated a positive relationship ($r = 0.56$) and a significant impact of safety climate ($R^2 = 0.37$, $p < 0.01$) on organizational commitment. Among dimensions, co-worker safety behavior demonstrated the most potent effect ($\beta = .63$), followed by management commitment to safety ($\beta = .58$), supervisor safety behavior ($\beta = .51$), and worker involvement ($\beta = .33$), all significant at $p < .01$. These findings suggest that construction sector organizations in South Asian countries must recognize the critical role of work-site safety in fostering employee organizational commitment. This extends SET by demonstrating how the reciprocity mechanism operates, with collectivistic cultures amplifying peer-level influences. When employees feel safe during employment, they are more likely to develop an emotional attachment and a sense of obligation toward their organizations, which is manifested through commitment. As such, visible investments in employee safety can substantially enhance organizational commitment, particularly in high-risk industries such as the construction sector.

Keywords: *Construction industry, Safety climate, Organizational commitment, Social Exchange Theory (SET), Sri Lanka*

Introduction

The construction sector is one of the world's most hazardous industries, alongside agriculture, forestry, fishing, mining, and manufacturing (International Labour Organization -ILO, 2024). Construction remains a high-risk industry in many regions and has the highest rates of severe injury and fatality (Trask & Linderoth, 2023). Construction workers are exposed to various physical, mechanical, biological, and psycho-social risks associated with work (Onyango, 2022). As such, while opening economic opportunities for a country, the construction industry also poses significant challenges, particularly related to the occupational health, safety, and well-being of employees. Sri Lanka's construction industry is one of the most significant industries contributing to the country's socio-economic growth (Karunaratne, 2021). The Sri Lankan construction market was valued at $12.8 billion in 2022 (www.globaldata.com, 2024) and is projected to achieve an Annual Average Growth Rate (AAGR) of more than 5% between 2024 and 2027. According to Trading Economics (as cited in Gnanothayan & Kauškale, 2022), the construction sector's contribution to the Gross Domestic Product (GDP) was 143,035 million LKR ($715.9 million) as of September 2021. Following the end of the three-decade-old war in Sri Lanka in 2009, the country's construction sector saw a significant acceleration (Widanagamachchi, 2015; Wijewantha, 2018). Since March 2019, the sector has faced challenges due to the Easter Bomb attack in 2019, the COVID-19 pandemic in 2020 -21, the economic crisis, and political instability in 2022, gradually gaining momentum again since 2024. This is because the construction sector of a country is one of the most sensitive industries to national-level crises, as it serves as the backbone of a country's economic progress (Weerakoon et al., 2023). Thus, the importance of safe workplaces is increasingly being recognized not only as a fundamental requirement and right at work but also as an essential condition for fostering sustainable economic growth, productive employment, and decent work for all, regardless of the industry (Amponsah-Tawiah & Mensah, 2016).

Occupational health and safety is a multidisciplinary concept (Bhagawati, 2015) that is addressed in medicine, engineering, and human resource management, focusing on ensuring the health, safety, welfare, and well-being of employees through diverse perspectives. The health dimension encompasses chronic concerns, including occupational diseases, long-term exposures, ergonomic issues, and psychological wellness, while the safety dimension focuses on preventing acute incidents such as accidents, injuries, and fatalities (Tetrick et al., 2024; Amponsah-Tawiah & Dartey-Baah, 2011).

Occupational safety has become an important area of interest for all stakeholders concerned - employers, employees, the International Labour Organization (ILO), and national governments of countries, owing to its impact on achieving organizational and national goals (Crea et al., 2021). Irrespective of developed and developing nations, data reveal tremendously high rates of work-related deaths and injuries, with a greater contribution from these hazardous industries (e.g., Moreira et al.,

2024). Occupational accidents or work-related diseases contribute to more than 2.78 million deaths and 374 million non-fatal injuries globally (Arnold et al., 2019). ILO (2024) estimates that over 395 million workers worldwide sustained a non-fatal work injury in 2019. In addition, ILO (2024) reports that approximately 2.93 million workers died in 2019 as a result of work-related factors (e.g., accidents or illnesses), which is an increase of more than 12% compared to the year 2000. The large majority of these deaths are attributed to work-related diseases, while work accidents have resulted in 330,000 deaths (ILO, 2024). In addition to the consequences faced by employees (e.g., disabilities, illnesses, deaths) several negative consequences are experienced by organizations due to these fatal and non-fatal accidents and work-related illnesses, such as compensation payments to families of deceased employees, court cases related to deaths and permanent disabilities, negative reputation, loss of productivity, high absenteeism rates and turnover rates, etc. (Guarini & Ranieri, 2021).

According to Castleman (2019), many hazardous industries are moving toward developing nations. Thus, these industries in developing nations are suffering enormously in terms of economic and personnel costs due to injuries from occupational accidents. In a recent publication, ILO (2024) revealed that mining and quarrying, construction, and utilities (e.g., water, gas, electricity) sectors are the three most hazardous sectors globally, based on the fatal occupational injury rate. Common features of these sectors include working environments that combine a wide range of hazards and risks, such as heavy machinery, unpredictable natural elements, hazardous substances, and physically demanding tasks (Jebelli et al., 2018). The nature of work in these sectors often involves working at heights, in confined spaces, or in proximity to large equipment, increasing the likelihood of accidents and injuries (Casanovas et al., 2014).

Despite this alarming nature and the terrifying statistics related to the occupational safety of employees worldwide, which indicate a significant common burden throughout the world, only a limited number of empirical studies have been conducted on this area in Asia, where 7.13% of the world's work-related deaths occur (Takala et al., 2024). According to Arnold et al. (2019), as the incidence of different types of workplace injuries varies among regions, region-specific scientific literature can more accurately depict the actual burden and, hence, be more useful for planning purposes. Thus, they suggest conducting research on employees' occupational health and safety in regions not commonly found in literature, such as lower- and middle-income settings in Africa and Asia. Out of the countries in the Asia-Pacific region, South Asia and especially Sri Lanka are one of the countries where a large number of citizens are engaged in sectors classified by the ILO as hazardous (ADB & ILO, 2017). Considering these hazardous industries, only a few studies have been conducted on human resources and related aspects, although a considerable number of studies focusing on the technical aspects of these industries are available (e.g., Amarasinghe & Hadiwattege, 2022; Rosayuru et al., 2022). In construction, where workers face immediate life-threatening hazards daily (falls, equipment accidents, struck-by incidents),

research concentrating on safety climate a specific subset of OHS that captures workers' perceptions of organizational safety policies, procedures, and practices (Zohar, 1980; Neal & Griffin, 2006; Newaz et al., 2018) is essential. It would enable to assess the safety climate of these industries and determine how rich/poor safety climates contribute to various individual (attitudes and behaviours), group, and organizational outcomes.

Occupational safety research conducted thus far in the construction industry has focused predominantly on safety-specific outcomes compliance, accidents, and injuries—while neglecting broader organizational consequences such as organizational commitment, despite its established links to workforce retention, productivity, and organizational citizenship behaviors (Ramalho et al., 2018). This narrow focus creates both a theoretical puzzle and a practical problem: theoretically, Social Exchange Theory (SET) predicts that workers would reciprocate organizational safety investments through enhanced commitment; yet this mechanism remains untested in construction settings in collectivist work cultures. Thus, firms lack evidence to justify safety expenditures beyond regulatory compliance, potentially underinvesting in safety during resource-constrained periods when commitment-based retention benefits could be most valuable.

Considering this necessity and the lacuna in research, this study addresses the following research questions (RQ):

RQ1: What is the relationship between safety climate and organizational commitment among construction workers in Sri Lanka?
RQ2: How do specific dimensions of safety climate individually influence organizational commitment?

RQ3: To what extent does safety climate explain variance in organizational commitment in Sri Lanka’s construction sector?

Accordingly, the primary objective of this research is to examine the impact of safety climate and its dimensions on organizational commitment among front-line construction workers, thereby establishing a business case for safety investments that extends beyond mere regulatory compliance.

The rest of this paper is organized as follows. The next section is the literature review and the development of the hypothesis. The methodology employed in this study comprises a discussion of the research design, sampling, questionnaire design, data collection procedures, and a brief explanation of the research context, specifically the construction industry of Sri Lanka. The statistical procedures used in data analysis are presented next. The final sections of the paper elaborate on the results, discuss the findings, highlight the practical and theoretical implications, and conclude with a discussion of limitations and suggestions for further research.

Review of Literature

This literature review examines the relationship between the safety climate of the work setting and employees' organizational commitment in hazardous work environments, utilizing the Social Exchange Theory (SET) to connect the constructs. Through this, a critical gap in the literature is identified: while safety climate research has established effects on safety outcomes, its influence on employee work-related attitudes, such as organizational commitment, remains underexplored, especially in developing country contexts.

Irrespective of whether it is in developed countries (e.g., Canada, USA, Australia) or developing nations (e.g., Sri Lanka, Ethiopia, Ghana), the safety of workers in the construction sector has always been a critical issue because of the negative reputation towards the industry as one of the most dangerous industrial sectors (Newaz et al., 2018). Both employees and organizations in developing nations are concerned about the increasing rate of industrial and occupational injury-related deaths and disabilities, with the movement of most of the hazardous industries to such countries (Al-Worafi, 2024). Due to this hazardous nature, in Sri Lanka and the wider South Asian region, front-line technical roles in hazardous work settings, such as the construction sector, are primarily occupied by men, reflecting long-standing labour patterns associated with the physically demanding and field-based nature of the work.

According to Sunindijo et al. (2017), nearly 90% of all workplace accidents at construction sites are attributed to human behaviour. In this regard, many studies have focused on the unsafe behaviour of front-line workers, with less attention paid to the underlying causes of those behaviors, such as organizational factors - the management systems and climates that shape worker actions (Zou & Sunindijo, 2013). Unless their safety is ensured, employees in these organizations will not deliver the optimal outcomes (Love et al., 2018). Due to these concerns regarding costs and outcomes, a considerable improvement in safety in the construction industry is evident worldwide (Gunduz & Ahsan, 2018).

Along with these efforts, one of the measures that has drawn the attention of the management of construction companies is the creation of a safety culture and the climate at the project sites. According to prior studies, a safety culture has been shown to improve safety performance. However, the same literature identifies it as an abstract phenomenon that is difficult to measure. One indicator of a safety culture has been identified as safety climate, and measuring safety climate is believed to provide insights into the current state of safety culture of a work setting (Glendon & Stanton, 2000, as cited in Chen et al., 2017). As one of the main focuses of this study is safety climate, the next section will elaborate on the same.

Safety Climate – Conceptualization and Dimensions

Safety climate is a subset of organizational climate that shapes workers' perceptions and behavior regarding safety (Newaz et al., 2018). As a climate construct, it reflects shared perceptions of employees regarding organizational policies, procedures, and practices related to workplace safety (Reichers & Schneider, 1990; Neal & Griffin, 2006). Despite extensive research, a consensus on the dimensional structure of the safety climate remains elusive. Management commitment to safety emerges as the most consistent dimension across industries (Zohar, 1980), while other dimensions vary by context according to prior studies. Due to the dimensional heterogeneity, Zohar (2010) advocates for industry-specific safety climate dimensional structures. For the construction industry, researchers have proposed various dimensional structures for safety climate structures, including management commitment, supervisor support, co-worker behavior and support, work pressure (balance between output and safety), availability of safe equipment, knowledge on safety, and worker involvement (Huang et al., 2006; Guo et al., 2016; Newaz et al., 2018).

Accordingly, considering the Social Exchange Theory's focus on relational exchanges and the nature of the study which is undertaken in the Sri Lankan construction context, this study adopts a four-dimensional model:

(1) management commitment to safety, (2) supervisor safety behavior, (3) co-worker safety behavior, and (4) individual worker involvement. These dimensions capture the multi-level nature of the safety climate from organizational leadership through supervisory implementation to peer interactions and individual agency while maintaining measurement parsimony appropriate for this exploratory study.

Management commitment to safety

Top management's commitment to safety in high-risk sectors, primarily including the construction sector, represents the organizational foundation, determining resource allocation and the priority assigned to safety relative to competing goals (Zohar, 1980). This commitment manifests through visible investments in safety infrastructure, equipment, training, and consistent policy enforcement (Larsson et al., 2008). Beyond reducing accidents, management commitment may signal that the organization values employees' well-being, potentially creating reciprocal obligations for workers to demonstrate organizational commitment a mechanism requiring empirical examination.

Supervisor safety behaviour

In addition to top management, first-line supervisors are considered a key group in ensuring employees' health, safety, and well-being within the hierarchical structure of the construction sector. They

constitute the critical bridge between organizational policies and worker implementation. First-line supervisors monitor unsafe practices, reward safety adherence, model safe methods, and adapt formal procedures to project-specific conditions (Amponsah-Tawiah & Mensah, 2016; Cooke et al., 2018). Their daily interactions with employees position them as the most visible organizational representatives, making their safety behaviors particularly influential in shaping workers' perceptions of organizational priorities (Fang et al., 2015). However, whether these supervisor safety behaviors influence employee work-related attitudes, such as organizational commitment, remains unexplored.

Co-worker safety behavior

This reflects workers' actions ensuring their own and colleagues' safety (Lingard et al., 2010). Based on the safety behaviors of co-workers, employees will perceive how their colleagues value safety. The safety behaviors exhibited by employees within small groups where construction activities occur collectively determine the safety of their peers and the safety climate of the organization (Lingard et al., 2010). Choudhry and Fang (2008) state that supervisors and co-workers significantly influence the safety climate in the construction context, as these are the two parties with whom employees interact on a day-to-day basis. Co-worker safety behavior may be particularly influential in collectivistic cultures, such as Sri Lanka, where peer relationships hold greater significance than in individualistic contexts. Nevertheless, whether co-worker safety behavior influences organizational commitment, and whether this influence differs from that of management and supervisors, remains empirically unexamined.

Worker involvement in ensuring safety at the construction site

Based on how workers perceive risk, they take responsibility for ensuring safety at the construction site (Trillo-Cabello et al., 2021). As construction activities often occur outdoors, a larger portion of control lies with the workers themselves, irrespective of the efforts of top management. Workers' involvement in ensuring safety reflects their personal responsibility and active participation in creating safe environments (Mohandes & Zhang, 2021). However, research suggests that workers' understanding of safety responsibilities remains limited in Sri Lankan and South Asian contexts compared to Western settings (Dasandara & Dissanayake, 2021), indicating that this dimension may function differently and potentially influence employees' organizational commitment through distinct mechanisms.

Safety Climate and Organizational Commitment

As research on safety climate in the construction industry has matured, studies have established strong empirical links between organizational safety climate and safety performance or safety outcomes such as compliance with safe working practices, self-reported safety behaviors, and accident reduction (Dedobbeleer & Béland, 1991; Fang et al., 2006; Zhang et al., 2015). These studies confirm that safety

climate influences safety motivation, safety behavior, and ultimately, safety performance (Griffin & Neal, 2000). However, limited attention has been paid to whether safety climate influences broader work-related attitudes and behaviors of employees beyond safety-specific outcomes. Thus, a significant knowledge gap exists regarding whether and how safety climate affects organizational commitment among construction workers, particularly in developing country contexts such as Sri Lanka. Thus, next, organizational commitment in hazardous industries is discussed, followed by an explanation of the theoretical foundation for linking safety climate to organizational commitment, which is the focus of this study.

Organizational commitment represents a psychological state characterizing employees' relationships with their organization, manifesting as attachment, identification, and involvement (Mowday et al., 1982). Miller (2003, p. 73) defines it as the "state in which an employee identifies with a particular organization and its goals and wishes to maintain membership." These definitions share common elements psychological attachment, acceptance of organizational values, and intention to maintain membership particularly important in the construction industry, given the skilled labor shortages and high turnover (Widanagamachchi, 2015). Despite extensive studies on organizational commitment of employees across industries, research specifically examining commitment among workers in hazardous industries remains limited. Traditional commitment-related research has focused predominantly on white-collar office workers (Meyer & Allen, 1991), potentially limiting its applicability to blue-collar construction workers who face dramatically different conditions, including physical demands, outdoor environments, and daily exposure to life-threatening hazards.

Tetrick et al. (2024) argue that occupational safety-related factors become particularly salient for commitment in dangerous work because they address survival and security needs before higher-order needs. When workers face daily risks of injury or death, organizational practices ensuring physical safety may eclipse other factors in shaping psychological attachment—yet this remains empirically undertested. The available studies linking occupational safety to commitment yield promising but limited findings. Amponsah-Tawiah and Mensah (2016) found positive relationships between safety practices and commitment in Ghana's mining industry, while Mashi et al. (2022) showed that management commitment to safety enhanced job embeddedness in hotels. However, according to the author's knowledge, no studies have examined this relationship among Sri Lankan construction workers or explored how safety climate dimensions differentially influence commitment. In light of the above, this study employs the social exchange perspective as the underlying mechanism to establish the relationship between safety climate and organizational commitment.

Hypotheses Development

Social Exchange Theory (SET) provides the theoretical framework for understanding how safety climate influences organizational commitment (Blau, 1964). SET posits that social relationships develop through the exchange of resources governed by reciprocity norms, i.e., when one party acts in a way that benefits another party, an implicit obligation is generated for the recipient to reciprocate (Blau, 1964). Applied to employment relationships, SET suggests that when organizations look after employees well whether through tangible (such as salary and benefits) or intangible resources (such as respect, development, and safety) employees develop a sense of obligation to reciprocate through positive attitudes and behaviours (Tsui et al., 1997).

Safety climate represents a particularly significant organizational investment in employee well-being. When construction workers perceive genuine organizational prioritization of their physical safety—through management commitment, supervisor enforcement, co-worker vigilance, and worker empowerment they receive a clear signal: "This organization values my life." In construction, where workers face daily life-threatening hazards, this signal carries profound weight. However, theoretically, whether SET's reciprocity predictions hold when exchanges involve survival-level concerns (such as physical safety) rather than developmental benefits remains undertested. Thus, based on the norm of reciprocity, which is the foundation of SET, this study argues that employees' positive perceptions of the organizational safety climate will have a positive impact on their organizational commitment. As such, if the workers feel that their organization is concerned about their health and safety by creating a safe working climate, they would prefer to be identified with the organization, be involved with it, and be loyal to it. Furthermore, SET predicts that reciprocity operates at multiple levels. Accordingly, in line with this multi-level reciprocity, it can be posited that management commitment represents organisation-level exchange, supervisor behaviour represents leader-member exchange, co-worker behaviour represents team-member exchange, and worker involvement represents empowerment reciprocity. Thus, this multi-level dynamic suggests different safety climate dimensions may influence organizational commitment through distinct mechanisms and with varying strength—requiring empirical examination.

Accordingly, based on SET and the related empirical literature on occupational safety climate and organizational commitment, the following hypotheses were posited. They are tested using the correlation and regression analyses, and the results are presented in the data analyses and results section:

H_1: Occupational health and safety climate has a positive effect on organizational commitment of construction workers

H_{1a}: Management commitment to safety has a positive effect on organizational commitment of construction workers

H_{1b}: Supervisor safety behaviour has a positive effect on organizational commitment of construction workers

H_{1c}: Co-worker safety behavior has a positive effect on the organizational commitment of construction workers

H_{1d}: Worker's involvement has a positive effect on organizational commitment of construction workers

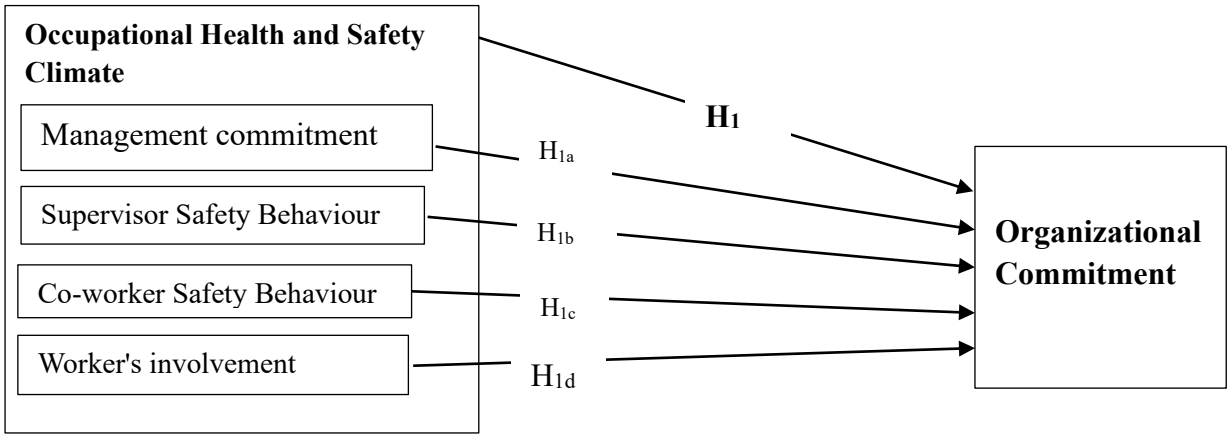

Figure 01 – Conceptual Framework

Source: Developed by the author based on the literature

Materials and Methods

Sampling Design

The study was conducted by collecting data from front-line technical officers at 15 large-scale construction companies operating in Sri Lanka. The study focused on large-scale construction companies as these organizations are more likely to have formalized safety practices, enabling meaningful assessment of safety climate perceptions. These large companies employ the majority of the formal construction workforce in Sri Lanka's urban construction sector (Karunaratne, 2021), and these organizations face greater reputational pressures regarding safety compliance, making safety climate particularly relevant to organizational outcomes. The 15 companies were selected based on the willingness of their employees to participate and represented a diverse range of construction activities, including building construction, infrastructure development, and mixed-use projects.

As the population size is unknown, the sample size for the study was determined using the sample-to-item ratio of 05-to-01, taking guidance from Gorsuch (1983). Accordingly, the required sample size for the study was 160 (32 items × 05 = 160). The respondents were conveniently sampled due to the unavailability of a population or sampling frame, as well as the transient nature of construction project sites, which makes probability sampling impractical. This approach is consistent with prior occupational health and safety research in construction settings where access to workers is similarly constrained

(Amponsah-Tawiah & Mensah, 2016; Newaz et al., 2018). To mitigate the limitations of convenience sampling, the author included 15 companies across different project types and ensured geographical diversity.

Questionnaire Design (Instrumentation)

The questionnaire consisted of three main sections: Part I - Safety climate factors, Part II - Organizational commitment, and Part III – Demographic Information. All items, except the demographic information questions, were rated on a 7-point Likert scale, ranging from '1= Strongly Disagree' to '7 = Strongly Agree.' As the study sample consisted of front-line technical officers, the questionnaire and cover letter were designed in the Sinhala language. For this purpose, the questionnaire was translated from English, the original language of the scales, into Sinhala. Then, the support of a third party was obtained to back-translate the questionnaire from Sinhala into English, ensuring the accuracy of the translation.

The safety climate was measured through the perceptions of workers on 23 items from standard, validated measures for each identified dimension. Organizational commitment was measured using the 9-item British Organizational Commitment Scale (BOCS), developed by Cook and Wall (1980), specifically for blue-collar industrial workers. It measures three dimensions of organizational commitment. The dimensions of each variable, the measure source, and the number of items used to measure each variable/dimension are presented in Table 01. Organizational commitment has traditionally been operationalized and measured using different scales as a unidimensional or a multidimensional construct (Swailes, 2002). Of the different operationalizations, the author used the three forms of organizational commitment suggested by Cook and Wall (1980), focusing on blue-collar workers. According to Cook and Wall, the three-component model of organizational commitment comprises of a) acceptance of the organization's values (identification), (b) willingness to exert effort on behalf of the organization (involvement), and (c) desire to remain an employee of the organization (loyalty). According to them, these three forms of commitment can occur simultaneously in varying degrees. Upon developing the questionnaire, a pilot study was initially conducted, and the results are explained next.

Table 1: Operationalization of constructs

Variable	**Dimension /Factor**	**No.of items**	**Source**
Organizational commitment	Organizational identification	03-items	Cook and Wall (1980)
	Organizational involvement	03-items	
	Organizational loyalty	03-items	
Safety climate	Management Commitment to Safety (MCS)	06-items	03 items from Hayes et al., 1998; 02 items from Zohar &

			Luria, 2005; 01 item from Carthey et al., 2001
	Supervisor Safety Behaviour (SSB)	06-items	Hayes et al., 1998
	Co-worker Safety Behaviour (CSB)	04-items	Hayes et al., 1998
	Worker's Involvement (WI)	07-items	Mohamed, 2002

Pilot study

Initially, a pilot study was conducted to test the questionnaire before data collection commenced. The author checked the understandability of the questionnaire and reliability of the measurement scales using a sample of 32 workers from the construction sector who agreed to participate. The reliability statistics of safety climate and its dimensions, as well as organizational commitment, produced from the pilot test, are presented in Table 02. The following section explains the data collection procedure of the proper study.

Table 2: Reliability statistics of the pilot test

	Safety climate	**Organizational commitment**	**Management Commitment to Safety (MCS)**	**Supervisor Safety Behaviour (SSB)**	**Co-worker Safety Behaviour (CSB)**	**Worker's Involvement (WI)**
Cronbach's Alpha	.9	.77	.8	.79	.74	.76

Source: Survey data

Procedure

This was a cross-sectional quantitative study that adopted a survey strategy. Data were collected from a sample of 192 workers using the pre-tested questionnaire over a period of 2.5 months (early February to early April, 2025). In compliance with research ethics, the company names of the technical officers who participated in the survey are withheld. In addition to the three main sections of the questionnaire, it included a cover letter that provided an overview of the study and assured respondents that it was conducted purely for academic purposes. The two data collectors, who were male school leavers, were employed by the researcher to administer questionnaires to front-line technical officers who were willing and available to participate in the study, to minimize literacy variations and survey fatigue among manual workers.

The demographic details of the respondents are displayed in Table 03. The key highlight of the sample is that it consisted of completely male employees, as the front-line technical officers in most of the large-scale construction companies in Sri Lanka are males. Due to the hazardous nature of construction

work, front-line technical roles in Sri Lanka and the wider South Asian region are predominantly occupied by men, reflecting long-standing labor patterns associated with the physically demanding and field-based nature of the work (ADB & ILO, 2017).

Table 3: Demographic characteristics of the sample

Variable	Characteristics	Frequency	Percentage (%)
Gender	Male	192	100
	Female	00	-
	Prefer not to mention	00	-
Age (in years)	Below 21 years	5	3
	Between 21 – 30 years	69	36
	Between 30 – 40 years	81	42
	Between 40 - 50 years	19	10
	Between 50 – 60 years	13	7
	Above 60 years	5	3
Marital status	Single	89	46
	Married without children	12	6
	Married with children	75	39
	Divorced or separated	7	4
	Widowed	9	5
Tenure with the organization (in years)	Less than 01 year	43	22
	1-5 years	99	52
	More than 05 years	50	26
Educational background	GCE A/L or below	12	6
	NCT	40	21
	HNDE	44	23
	NDT	37	19
	Any other vocational qualification	39	21
	Graduate Trainee	20	10

Source: Survey data

Data Analysis and Results

The data collected using the paper-and-pencil questionnaire were entered into SPSS software version 23.0. Since there were no missing data, after confirming entry accuracy, data screening was performed by testing for normality and linearity. Normality was tested using skewness and kurtosis statistics, and linearity was tested using the Lack-of-Fit test. As the univariate normality and linearity assumptions

were met, it was ensured that there were no violations of the basic assumptions. Subsequently, the following preliminary analyses were performed: 1) reliability analysis (Table 04), 2) Pearson's product-moment correlation analysis (Table 05), 3) multicollinearity assessment, and 4) common method variance. As shown in Table 04, Cronbach's alpha for the two main variables and the dimensions of the independent variable was above .7. Thus, it was concluded that reliability was ensured in the data.

Table 4: Reliability analysis of actual data

	Safety Climate	**Organizational Commitment**	**Management Commitment to Safety (MCS)**	**Supervisor Safety Behaviour (SSB)**	**Co-worker Safety Behaviour (CSB)**	**Worker's Involvement (WI)**
Cronbach's Alpha	.8	.76	.75	.71	.75	.77

Source: Survey data

As indicated in Table 05, the results showed a moderate positive correlation between safety climate ($r = .563$, $p < .01$) and organizational commitment. Furthermore, the results indicated a moderate positive relationship between the dimensions of safety climate and organizational commitment, except for co-worker safety behavior, for which a strong positive association ($r = .63$, $p < .01$) was found.

Table 5: Pearson Product-Moment Correlation

Variable	**Safety Climate**	**Management Commitment to Safety (MCS)**	**Supervisor Safety Behaviour (SSB)**	**Co-worker Safety Behaviour (CSB)**	**Worker's Involvement (WI)**
Organizational Commitment	.56	.58	.51	.63	.33

Source: Survey data

Before conducting the regression analysis, multicollinearity diagnostics were performed to assess the independence of the dimensions within the safety climate, and the Variance Inflation Factor (VIF) values were below the threshold of 10, and tolerance values ranged were above 0.10, indicating that multicollinearity was not a concern (Hair et al., 2010). These results confirmed that the four safety climate dimensions, while correlated, were sufficiently distinct to be included simultaneously in the regression model.

A simple linear regression was performed to assess the impact of safety climate on organizational commitment. Multiple regression analysis was conducted to examine the impact of each dimension of

occupational health and safety climate on organizational commitment. The beta values associated with each dimension of safety climate are presented in Table 06. The study model was statistically significant ($F = 58.23$, $p < .01$). The R^2 value indicates that safety climate accounts for 36.79% ($R^2 = .3679$) of the variation in the organisational commitment of technical officers in the construction sector, indicating a moderate effect size. The standardized beta values of the regression analysis are presented in Table 06.

Table 6: Regression Analysis – Standardized Beta values

IV / DV	OHS Climate	Management Commitment to Safety (MCS)	Supervisor Safety Behaviour (SSB)	Co-worker Safety Behaviour (CSB)	Worker's Involvement (WI)
Organizational Commitment	.56	.58	.51	.63	.33

Source: Survey data

Discussion of Findings

This study examined the effects of safety climate and its dimensions on organizational commitment among construction workers in Sri Lanka, guided by the Social Exchange Theory. According to the results, there is empirical support for all hypotheses, but more importantly, revealing nuanced patterns deserving deeper examination.

The correlation analysis confirmed a moderate positive association ($r = .563$) between safety climate and organizational commitment, and the regression analysis showed that safety climate had a moderate effect (36.79%) on organizational commitment. This finding concretely confirms SET's reciprocity norm; i.e., when construction workers perceive that their organization invests in their physical safety and well-being through comprehensive safety practices, they reciprocate it by identifying with, becoming involved in, and showing loyalty to the organization. In the context of Sri Lanka's construction sector, where workers face daily life-threatening hazards, this reciprocity mechanism is particularly salient. Safety is not merely a policy concern for them but a daily lived experience that signals whether the organization genuinely values workers' lives.

The varying effect sizes across dimensions of safety climate (β ranging from 0.33 to 0.63) reveal that not all safety climate components equally influence the organizational commitment of technical officers. Out of the dimensions, co-worker safety behavior emerged as the most potent predictor, showing a strong positive association, likely due to the collectivistic nature of South Asian work culture (Hofstede, 2001) and the team-based structure of construction work in Sri Lanka. This finding diverges from Western management literature, which typically emphasizes management commitment as the

primary contributor. Construction workers spend most of their time with co-workers rather than the management, making peer behaviors more influential. This suggests that peer-based safety interventions may be particularly effective in Sri Lankan construction settings.

Management commitment showed the second-strongest effect, aligning with literature establishing top management's pivotal role in creating a safety climate which could lead to organizational commitment of employees (Zohar, 1980; Larsson et al., 2008). This dimension likely operates as a distal factor—setting the organizational tone and resource allocation for safety—which then manifests through more proximal factors (supervisor and co-worker behaviors). The strong effect of management commitment to safety suggests that Sri Lankan construction workers are willing to reciprocate for management's genuine commitment and investment in safety.

Supervisor safety behavior showed moderate but significant effects. Supervisors serve as the critical bridge between the management and worker experience, translating management safety commitments into daily practices. The somewhat lower coefficient of SSB compared to CSB may reflect that supervisor-worker relationships in Sri Lankan construction are more hierarchical and transactional, potentially limiting the depth of social exchange compared to peer relationships.

Worker involvement showed the weakest, but a significant effect. This relatively lower impact requires careful interpretation. This may reflect that in Sri Lanka's construction context, where safety culture is still developing (Dasandara & Dissanayake, 2021), workers have not yet fully internalized their personal safety responsibilities. This finding highlights a critical development area: the need to empower workers to take ownership of safety, which may require cultural and structural changes beyond just training.

The study's findings align not only with SET but also with an earlier study conducted by Amponsah-Tawiah and Mensah (2016), who investigated the association between occupational health and safety and individual dimensions of organizational commitment using a sample of workers from a developing country in a hazardous sector - the Ghanaian mining industry. However, the current study reveals more substantial effects for co-worker behavior than typically reported in Western studies (e.g., Newaz et al., 2018), suggesting cultural moderation of the safety climate's influence.

Implications of the study

The findings of this study lend credence to Social Exchange Theory (SET), as the hypotheses established based on the norm of reciprocity which forms SET's foundation—are supported by the data. Importantly, this extends SET's applicability to survival-level exchanges in hazardous work contexts, demonstrating that the reciprocity mechanism also operates powerfully when exchanges involve fundamental physical safety rather than developmental benefits typically studied in organizational

research. Furthermore, while aligning with other construction safety studies from an Organizational Behavior perspective that focus on front-line workers (e.g., Wang et al., 2024), this study emphasizes organizational factors related to safety specifically safety climate as a subset of the broader organizational climate (Guo et al., 2016). Although the positive impact of safety climate on employees' safety outcomes (e.g., compliance, reduced accidents) is well established in construction (Newaz et al., 2018), this study addresses a critical gap: the impact of safety climate on broader work outcomes beyond safety performance. Findings of the study demonstrate that when employers create a favorable safety climate at work sites, employees reciprocate this organizational investment by manifesting a commitment toward the organization, fulfilling the mutual obligation predicted by SET.

The findings convey critical messages to construction industry stakeholders about strategic safety investments and workforce management. Construction company leadership must recognize that safety investments are not merely regulatory costs to minimize, but strategic investments yielding organizational returns. Study data also suggest that visible safety investments pay dividends through enhanced worker commitment, offsetting costs through potentially reduced turnover and improved productivity. This is particularly crucial during economic crises when construction companies face intense competition for limited projects and government tenders. In such scenarios, a company's reputation as an organization that prioritizes employee well-being and having a committed workforce becomes a competitive advantage for securing contracts. Therefore, organizations must go beyond minimum compliance requirements and focus on creating safety climates that employees perceive as genuinely positive through visible, substantial safety investments. Employees conduct cost-benefit analyses when deciding on their organizational loyalty; when the benefits of staying including perceived organizational care for their safety exceed the costs, they choose to remain rather than leave.

Given the strong influence of co-worker safety behavior identified in this study particularly salient in Sri Lanka's collectivistic cultural context construction companies should implement peer-based safety interventions. Specifically, it is recommended to establish "Safety Buddy Systems" where workers are paired to monitor and support each other's safety practices. Additionally, companies should create worker-led safety committees and formally recognize peer safety champions. These approaches leverage collectivistic cultural values while distributing safety responsibility across the workforce, moving beyond top-down enforcement to peer-driven safety consciousness.

The findings emphasize that creating a safe climate is not solely the responsibility of the top management and the supervisors worker involvement is also crucial. Without securing worker participation, organizational safety efforts and investments risk being undermined or wasted. Therefore, construction companies must invest in educating and training workers about their safety responsibilities and the critical role they play in creating safe work environments. This education should emphasize

workers' ownership over work-site safety rather than framing safety as something imposed by management. Organizations should make a concerted effort to empower workers and secure their active participation in implementing safety policies, activities, and initiatives.

Limitations of the Study and Directions for Further Studies

Along with its strengths, this study has several limitations that readers need to consider when interpreting the results. Due to the nature of the study, primary data had to be collected from a single source - front-line workers of construction companies. As the safety climate is measured in terms of employees' perceptions, self-report data had to be collected; hence, it would have been ideal if organizational commitment data could have been collected from the supervisors of these workers. Nevertheless, to the best of the author's knowledge, only self-report scales are available for measuring organizational commitment; thus, the data for the survey were collected from a single source. As such, the relationships among the variables may be confounded by common method variance. Following the guidance of Podsakoff et al. (2003), the author took all possible measures to minimize the effects of common method variance by temporally separating the data collection for predictor and criterion variables and ensuring the anonymity of the responses. These self-report measures rely on participants providing honest and accurate responses; however, they may be influenced of social desirability bias (Grimm, 2010). Apart from that, the study was based on a cross-sectional design, where data were collected at one point in time, which prevented making definitive causal conclusions. As such, future researchers should consider replicating this study using longitudinal data collected from multiple sources.

Eventhough the findings of this study could be easily generalized to similar South Asian country contexts, the all-male respondent sample, which is representative of Sri Lanka's current construction workforce composition, limits the generalizability of the findings to countries where construction teams are increasingly diverse.

While substantial, the results suggest that other factors beyond safety climate also influence commitment in construction settings. The remaining 63% of unexplained variance may be attributable to several other antecedent variables, such as compensation, leadership quality beyond safety, organizational culture, individual dispositional factors, psychological contract of safety, safety leadership, or senior management commitment to safety, as well as mediating variables such as safety motivation, safety behavior, and safety performance, not examined in this study. This finding highlights that while safety climate is an important driver of commitment particularly significant in hazardous industries it operates alongside other organizational and individual factors. Future research should develop more comprehensive models incorporating these additional determinants.

Conclusion

This study investigated the relationship between safety climate and organizational commitment in one of the most hazardous industries, not only in Sri Lanka but also in the world, which is the construction industry of Sri Lanka. The hypotheses were established mainly with the theoretical support of Social Exchange Theory (SET), which has its foundation in the norm of reciprocity. Data analysis indicated that safety climate is positively associated with organizational commitment, and the effect of each dimension of safety climate on organizational commitment was also tested. Thus, based on the results, it could be concluded that positive perceptions about safety climate would encourage employees to be committed towards their respective organizations. Therefore, organizations in the construction industry of Sri Lanka, which is booming gradually, should recognize that employees who perceive their working climate as safe will develop an emotional attachment towards the organizations. Such employees would perform their duties with a sense of obligation towards their organization and are most likely to remain with the organization. In conclusion, it could be stated that organizations in this kind of hazardous sectors, such as construction, forestry, mining, quarrying, etc., can enhance the commitment of their employees by creating a favorable safety climate within their work settings.

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