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The Effects of ISO 45001 Components on Employees' Job Performance: Evidence from the Dahra Field at the Libyan Waha Oil Company

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Abstract **Original Research Article**

The study aimed to predict the effects of the components of ISO 45001:2018 on the Dahra field of the Waha Oil Company in Libya. To achieve this goal, the researcher targeted a random sample of 200 workers in the Dahra field. Data were collected through a questionnaire distributed to the sample, from which 170 valid questionnaires were retrieved for analysis. ISO 45001:2018 was measured through seven components that the ISO45001:2018 organization referred to in its 2024 release, while job performance was measured through the work performance scale. The study model was built based on the researcher's critical reviews, which resulted in seven hypotheses. Before testing the hypotheses, tests were conducted on the nature of the data, linearity and homogeneity of variance, and in light of these, multiple linear regression was determined to test the hypotheses. The results of multiple regression analysis indicated that there are effects of the components of applying ISO 45001 on job performance. The current study recommends more focus on ISO 45001 and its impact on job performance through intermediary variables such as job satisfaction, accidents, and work-related injuries.

Keywords: ISO45001, Components of ISO45001, Job Performance.

INTRODUCTION

For decades, the issue of employee performance has been a concern for institutions that seek in various ways to raise its levels. In fact, there are many studies that have addressed the causes of low performance. Without a doubt, performance was linked to many factors, the most important of which was the work environment such as work satisfaction, salary, other benefits, and levels of occupational health and safety in the organization.

This study focused on the role of ISO:2018 in raising the performance levels of employees at Waha Oil Company (WOC). In this filed, Malinda and Soediantono (2022) pointed out that ISO 45001:2018 increases its ability to respond to regulatory compliance issues, reduces overall accident costs, reduces downtime, operational interruption costs and insurance premiums, and reduces absenteeism and turnover.

In fact, the ISO system suffers from an inferiority view from the management of institutions, and this may be because it is a system that costs institutions or because of lack of experience (Nolan, 2017). In Fadhil's (2021:68) study, which was implemented in the Iraqi Ministry of Education, the procedures and requirements of the occupational health and safety management system were at very weak rates, as the percentage reached (15%) with a gap of (85%). This gap came because of the application of the professional system not adopting the health and safety standard.

Liu, Liu, Li, and Wen. (2022) noted that an Occupational Health and Safety Management System (OHSMS) provides a systematic framework for an organization to manage Occupational Health and Safety (OHS) risks and opportunities. However, there is no consensus on whether different types of OHSMS are certified, including ISO 45001, can achieve the desired results. Therefore, it is urgent to study the factors that hinder the effective implementation of OHSMS and the

relationships between them, in order to provide guidance for improving the effectiveness of ISO 45001 certification.

In fact, studies have investigated the role of ISO factors on health performance, not job performance. for example,

LITERATURE REVIEW

ISO45001:2018

ISO 45001 is an international standard that outlines requirements for an occupational health and safety (OH&S) management system. It aims to enable organizations to provide safe and healthy workplaces by systematically preventing work-related injuries and diseases, as well as proactively improving its OH&S performance. This standard is applicable to organizations of all sizes across various industries and can be integrated with other ISO management system standards. It emphasizes leadership commitment, worker participation, hazard identification, risk assessment, compliance with legal and regulatory requirements, emergency preparedness, incident investigation, and continuous improvement through the Plan-Do-Check-Act cycle (https://www.iso.org).

There are groups of elements that make up ISO 45001:2018, which are, context of the organization, leadership and commitment, planning, support, operation, performance evaluation, and management review. If these factors are not employed effectively in the market, they become challenges in implementing ISO45001:2018 as following: without real commitment from senior management and strong support from leadership, it will be difficult to allocate resources, drive change, and promote a culture of safety. More, balancing the dedicated resources that ISO 45001 implementation often requires, including staff, time and financial investment, can be difficult. On the other hand, integration with existing systems such as ISO 9001 or ISO 14001. Integrating ISO 45001 may be difficult and complex, and requires alignment and coordination between systems. Resistance to cultural change by employees who are accustomed to current practices and resist any new safety measures. Furthermore, Documentation and records that can take a long time to maintain, managing documents effectively and ensuring they are up to date is essential to comply with the ISO 45001 standard. Lastly, Difficulty assessing risks due to their lack of clarity. There is also the difficulty of identifying training needs and providing ongoing training. Effective communication is difficult, both internally and externally, and ensuring that relevant information is conveyed to all stakeholders can be difficult (Gautam, 2023).

JOB PERFORMANCE

Job performance reflects the ability of workers to carry out the duties they have been assigned, taking into account their abilities, the salaries they receive, and the amount of time expected to be necessary to complete the jobs (Ahmed, *et al.*, 2012).

Lai, Tang, Lu, Lee, and Lin (2020) who indicated that there are two indicators of job performance, which are task performance, which is reflected in the results of employees' task performance in the company, and helping behavior, which includes helping behavior among employees in the company.

RESEARCH HYPOTHESES

The Natural Relationship between ISO45001:2018 and Job Performance

Highly satisfied employees will exert extra effort and contribute positively to the effectiveness and efficiency of their organizations. Highly satisfied employees will exert extra effort and contribute positively to the effectiveness and efficiency of their organizations.

In fact, job performance has been widely used in scientific research, especially those related to human resources. The results of this work revealed important results by revealing the factors that affect the performance of employees and benefiting from them in the workplace. For example, studies have indicated that job performance is affected by the individual's compatibility with the work environment (Alajili, Alshrksi, 2022; Han *et al.*, 2015; Rajper *et al.*, 2020), and is affected by the behavior of managers and leaders in the organization (Zaid, Alajili, Musah, & Ramamoorthy, 2022).

This study attempts to explore the impact of ISO indicators in raising performance levels. Nwachukwu and Akpoh (2020) emphasized the importance of integrating occupational safety and health standards into an organization's operating procedures. They stressed that this integration not only enhances morale among workers and managers, but also enhances productivity and overall organizational performance. Neglecting occupational safety not only leads to financial costs, but also increases labor turnover within the company. Turning to the ISO 45001 dimensions, Purwanto *et al.*, (2020) conducted a study to determine the impact of different indicators of ISO 45001 on employee performance. Their findings revealed that seven indicators of the ISO 45001 standard – organization context, leadership, planning, support, operation, performance evaluation, and improvements – significantly influence employee performance. It is worth noting that the organization context within ISO 45001 emerged as the most influential dimension, with an effect size of 0.76 (Purwanto *et al.*, 2020, p. 1985). This underscores the critical role that ISO 45001:2018, as an occupational health and safety management framework, plays in shaping employee performance within organizations. By addressing the various dimensions outlined in ISO 45001:2018, organizations can effectively enhance safety standards, foster a positive

safety climate, and ultimately improve employee performance and organizational effectiveness.

Ghahramani and Salminen (2019) evaluated the effectiveness of OHSAS 18001 on safety performance of manufacturing companies in Iran. The results indicated that the OHSAS 18001 certificate did not affect the rate of occupational injuries, and the level of safety climate improved 4 to 9 years after obtaining the certificate.

Although there is research that has studied the relationship between ISO and job performance, researchers have not obtained any research that studies the impact of ISO components on job performance. Therefore, the research hypotheses can be formulated as follows:

1. The context of the organization does not affect job performance.
2. Leadership and Commitment of ISO45001:2018 does not affect job performance
3. Planning does not affect job performance
4. Support ISO45001:2018 does not affect job performance
5. Operation of ISO45001:2018 does not affect job performance
6. Performance Evaluation of ISO45001:2018 does not affect job performance
7. Management Review of ISO45001:2018 does not affect job performance

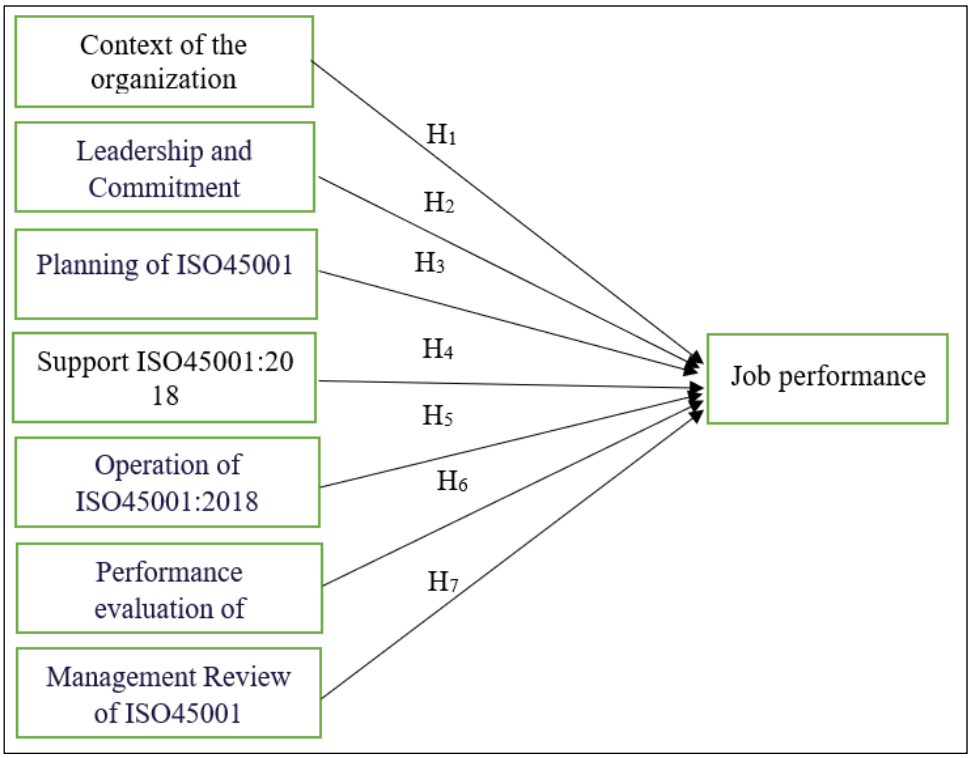

Figure 1: Theoretical Framework

METHODOLOGY

Given the nature of the study objectives and their basis on hypotheses, therefore a quantitative design is most appropriate.

The researcher used a simple random sample of 170 workers in the Al-Dhahra field of the Al-Waha Company in Libya. Use the questionnaire as a data collection tool. ISO 45001:2018 was measured through components (3 items for each component, except for the planning component, which is measured in four items), and each component contains a group of paragraphs International Organization for Standardization, 2018). The Individual Work Performance Questionnaire (IWPQ) scale was also used to measure job performance. Originally comprising 18 items, the scale encompasses three dimensions: task performance (5 items), 0contextual performance (8 items), and reflective behaviors (5 items). All items are measured on a Likert scale from 1 = strongly disagree to 5 = strongly agree. The statistical method used to test the hypotheses will be determined after examining the necessary assumptions for the dataset.

RESULTS

CHECK DATA

First, the data was examined to process the missing values of the data in a chain mean method in the SPSS program- version 26.

DISTRIBUTION ASSUMPTION

Coefficients of both skewness and kurtosis were used to determine the nature of the data distribution of univariate data. Standard coefficient of skewness should be between (±1), while kurtosis is between (±3) (Awang, 2015). The results of the test in Table 1 indicated that the coefficients of both skewness and kurtosis fell within the range (±1 and ±3 respectively), therefore it can be considered that the study data follow a normal distribution.

The results in Table 1 revealed that the skewness and kurtosis values were as recommended, and therefore it can be said that the data follows a normal distribution.

Table 1: Normality Test of the Univariable

Component	Skewness		Kurtosis	
	Statistics	Std. Error	Statistics	Std. Error
Context of the organization	-.466	.186	-.363	.370
Leadership and Commitment	.947	.186	1.190	.370
Planning of ISO45001	.044	.186	2.161	.370
Support ISO45001:2018	-.068	.186	1.379	.370
Operation of ISO45001:2018	-.127	.186	-.425	.370
Performance evaluation of ISO45001	-.355	.186	-.416	.370
Management Review of ISO45001	-.343	.186	-.129	.370
Job performance	-.031	.186	-.614	.370

LINEARITY ASSUMPTION

The results of the data linearity test as shown in Figure 2 showed that the points were clearly close on a straight line, and therefore there is no evidence that this assumption was violated.

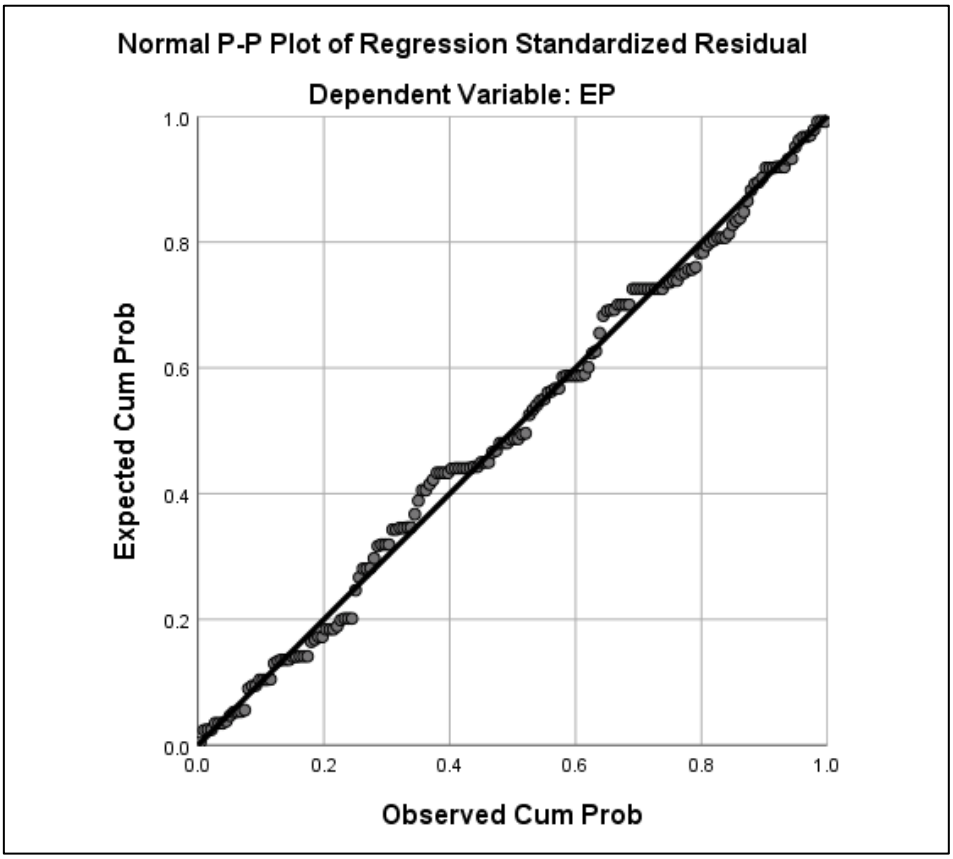

Figure 2: Linearity Assumption

HOMOSCEDASTICITY ASSUMPTION

Figure 3 appears the results of the homoscedasticity test through scatter plot diagrams of standardised residuals. These results indicate that homoscedasticity exists in the set of IVs (components of ISO45001:2018) and the variance of the DV (job performance). Furthermore, a visual inspection of the

distribution of residuals suggests an absence of heteroscedasticity.

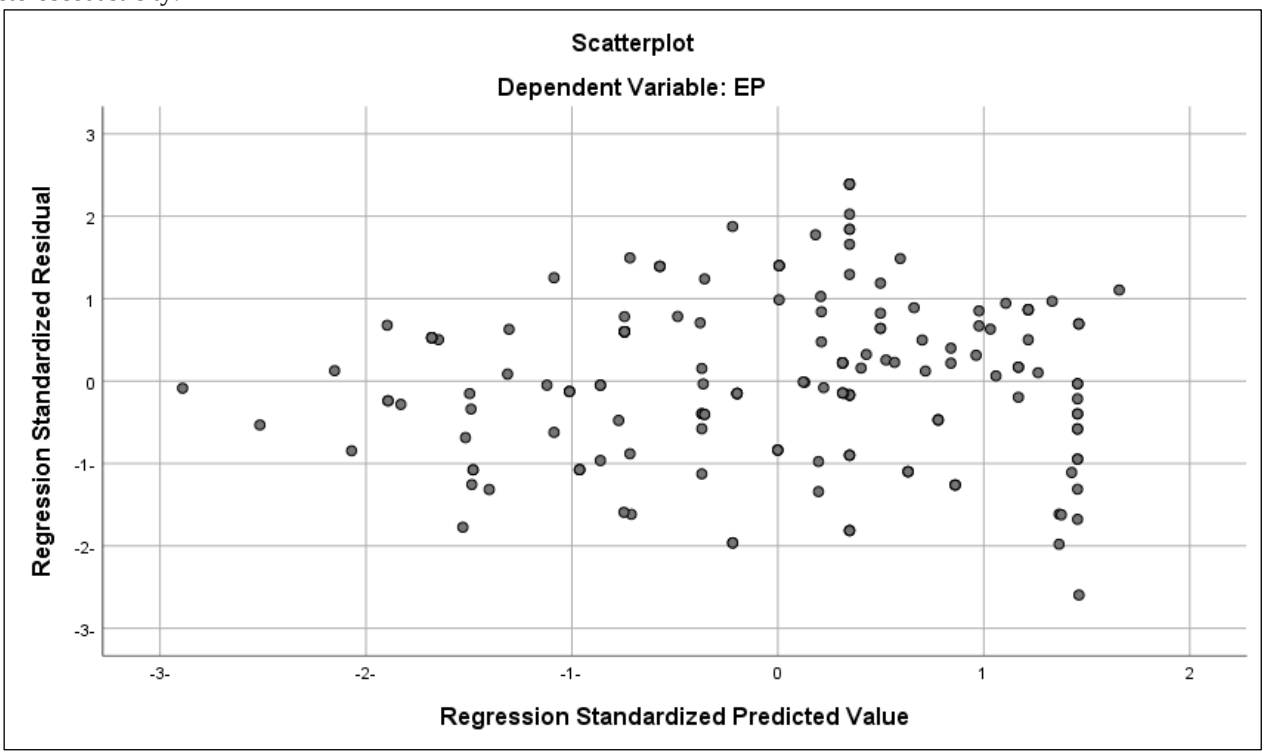

Figure 3: Homoscedasticity Assumption

THE MULTICOLLINEARITY ASSUMPTION

The multicollinearity test was used to investigate the correlation between independents variables the coefficients of which should not exceed 5.00 and tolerance levels should be in excess of .20 (Hair, Black, Babin, & Anderson ,2010). Table 2 shows the results of Variance Inflation Factor (VIF). It reveals that all values of VIF are less than 5.00, which, means there is no multicollinearity between all the exogenous variables.

Table 2: Variance Inflation Factor (VIF)

Independents Variables	**Collinearity Statistics**	
Context of the organization	**Tolerance**	**VIF value**
Leadership and Commitment	.849	1.178
Planning of ISO45001	.482	2.163
Support ISO45001:2018	.519	1.926
Operation of ISO45001:2018	.518	1.930
Performance evaluation of ISO45001	.452	2.233
Management Review of ISO45001	.837	1.23

EXPLORATORY FACTOR ANALYSIS

In order to obtain an appropriate factor structure for the analysis, exploratory factor analysis (EPA) was used a number of times, and the results of the analysis were as shown in Table 4. The factors were extracted by principal components method, and the varimax for rotation was used in the EFA. The results of the analysis indicated that 15 items were excluded and-25 items were kept. Moreover, the results also indicated the integration of the planning of ISO45001 component with the performance evaluation of ISO45001 into one factor.

The results also provided strong evidence of data quality and suitability for factor analysis, as (KMO') value exceeded (.81), Bartlett's Test of Sphericity was 2692, df = (300), and p- value less than (.05). Table 3 explains Rotated Component Matrix of EFA.

Table 3: Rotated Component Matrix of EFA

	Factors					
	1	**2**	**3**	**4**	**5**	**6**
ISO1					.875	
ISO2					.826	

	Factors					
	1	**2**	**3**	**4**	**5**	**6**
ISO3					.791	
ISO4				.887		
ISO5				.921		
ISO6				.897		
ISO7			.678			
ISO8			.762			
ISO9			.875			
ISO10			.605			
ISO11						.761
ISO12						.672
ISO14						.766
ISO15						.809
ISO18			.561			
ISO19			.511			
EP1		.868				
EP2		.847				
EP3		.826				
EP4		.802				
EP6	.845					
EP7	.876					
EP8	.827					
EP9	.756					
EP10	.777					

Descriptive Statistics for Variables

In this section, means and standard deviations were used to describe whether employees' expectations about the degree of implementation of ISO components were high or low, in Al-Waha Oil Company's Dahra field. The average is considered an indicator of these levels according to the range shown in Table 4.

Table 4: Mean Levels of Variables

Mean	**1- 80**	**1.81- 2.60**	**2.61- 3.40**	**3.41- 4.20**	**4.21- 5**
Level	very poor	poor	middle	high	very high

Sours: (Zaid *et al.*, 2022)

The means of all ISO45001:2018 components fell in the range of 2.49 - 3.22, and according to Table 4, this means that the respondents' expectations of the application of leadership, commitment, of ISO45001: 2018 in the Dahra field were weak (mean= 2.49), whilst, the expectations regarding the implementation of the rest of the ISO45001 components were moderate

Table 5: Descriptive Statistics

	Mean	**Std. Deviation**
Context of the organization of ISO45001	3.34	65274
Leadership & Commitment of ISO45001	2.49	.69012
Planning of ISO45001 & Performance evaluation of ISO45001	2.97	.62815
Support ISO45001:2018 & Operation of ISO45001:2018	3.12	.82052
Job performance	3.39	.73559

HYPOTHESIS TESTING

Since the assumptions of linearity and homogeneity of residuals were met, multiple regression analysis was employed to test the study hypotheses. The test results are shown in Table 6.

The results of the regression analysis showed that the correlation value of the ISO45001 components with job performance was close to (60), which means that it is a moderate correlation Sekaran, & Bougie2016), and that the value of (Adjusted R^2) = 44%, which means that the ISO45001 components explain 44% of the variance occurring in job performance, and that 56% is explained by other factors that were not addressed in the current study.

Table 6: Multiple Liner Regression Analysis

Model	R	R Square	Adjusted R Square
1	.599	.359	.344

Table 7 revealed the results of the ANOVA analysis, where the F value was 23 with two degrees of freedom of 4 and 165, and the significance level = .000, and it is less than .05, subsequently, we accept that the ISO45001 components have a positive effect on the job performance in Al-Dhahra field at Al-Waha Oil Company.

Table 7: ANOVA Test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.851	4	8.213	23.127	.000
	Residual	58.594	165	.355		
	Total	91.445	169			

To determine which of the ISO45001 components had an impact on job performance, stepwise regression was used. The results of the gradual analysis revealed that no component of ISO 45001 was excluded, and this indicates that all components positively affect job performance. Table 8 explains the strongest influences on job performance.

Table 8: Model Summary of stepwise regression

Model	R	R^2	Adjusted R^2
1	.476	.227	.222
2	.534	.285	.276
3	.579	.335	.323
4	.599	.359	.344

Table 8 reveals four models. The first model shows the strength of the context of the organization of ISO45001 with job performance, at 47.6, and it explains 22.7% of the variance occurring in job performance. While the second model shows that the two components (context of the organization of ISO45001 and leadership and commitment) are related to job performance by 53%. They explain 28.5% of the change in job performance. The third model captures the three components of ISO (context of the organization of ISO45001; leadership and commitment; and planning & performance evaluation of ISO45001), which were correlated by 57.9% and explained 33.5% of the variance occurring in job performance. Finally, the fourth model is the optimal one as it combines all the components of the ISO, and gives the highest and most interpretable correlation values than the previous three models.

DISCUSSION

The study aimed to predict the impact of the components of ISO 45001 when applied on the job performance of workers in the Dahra field of the Waha Oil Company. The results of the descriptive analysis showed that the respondents consider the levels of implementation of ISO components of ISO 45001 to be average, with the exception of the context component, which they expect to be poorly implemented. There are many reasons that can be listed in this regard, including, for example, that the prevailing culture among senior management towards implementing ISO 45001 is limited, and is not associated with the expected results when applying it, such as reducing accidents and work injuries, which in turn reduces insurance expenses. On the other hand, leaders focus on activities that generate returns and ignore those on which money is spent, and therefore the implementation of ISO is not of great importance to them.

On the other hand, the ISO 45001 application system may not be consistent with the company's existing occupational health and safety systems, and this may weaken interest in applying ISO.

On the other hand, the results of the quantitative analysis revealed important relationships between the components of ISO 45001 and job performance, as all components indicated their positive effects on performance. This study was not presented by previous studies that dealt only with qualitative analysis of ISO 45001 topics, and therefore the study recommends more such studies, especially in dealing with intermediate models.

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