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The Effect Of Servant Leadership, Employee Engagement And Work Stress On Work Safety With Contractor Safety Management System (CSMS) Mediation In The Oil And Gas Industry

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ABSTRACT
The Oil and Gas Industry (MIGAS) is a vital economic sector, but it faces high risks related to occupational safety and health. Workplace accidents in MIGAS can have serious consequences. In an effort to manage occupational safety in this sector, the Contractor Safety Management System (CSMS) plays a central role. Additionally, variables such as servant leadership, employee engagement, and work stress also have significant impacts on the level of occupational safety. This research aims to fill the knowledge gap regarding the influence of these variables, with CSMS serving as a mediator. The results of the Structural Equation Modeling Partial Least Square (SEM PLS) analysis indicate that Servant Leadership, Employee Engagement, work stress, and the Contractor Safety Management System (CSMS) positively and significantly influence the level of occupational safety. Furthermore, Servant Leadership, Employee Engagement, and work stress also have a positive and significant impact on CSMS. The key finding of this research is that CSMS acts as a mediator between Servant Leadership, Employee Engagement, work stress, and the level of occupational safety. The outcomes from the Focus Group Discussion (FGD) reveal that enhancing management commitment, improving training programs, and strengthening partnerships with contractors can substantially enhance occupational safety in specific industries, particularly in the context of the high-risk Oil and Gas industry. This conclusion provides a comprehensive view of the influencing factors and applicable strategies to improve occupational safety in this high- risk industry sector.

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INTRODUCTION

The oil and gas industry (MIGAS) is one of the most important economic sectors for many countries, but it is also faced with high risks related to work safety (Ministry of Energy and Mineral Resources, 2019). Oil and gas operations involve a variety of complex and high-risk jobs, such as drilling, producing, transporting, and processing oil and gas. In addition, much work in the oil and gas industry is carried out by external contractors who work closely with project owners (Arindya, 2019).

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In Indonesia, based on data from the BJPS Employment (2023), it reported an increase in cases of occupational accidents and diseases in the last three years in Indonesia. The data can be described as follows:

Table 1 Work Accident Data in Indonesia

Industri Kerja	2018		2019		2020		2021		2022	
	Kecelakaan Kerja	Kematian	Kecelakaan Kerja	Kematian	Kecelakaan Kerja	Kematian	Kecelakaan Kerja	Kematian	Kecelakaan Kerja	Kematian
Pertambangan	1,197	88	1,104	70	1,048	57	892	48	874	57
Konstruksi:	3,470	91	2,882	80	2,879	77	2,618	58	2,809	92
Manufaktur	9,820	170	9,156	122	9,549	124	8,337	109	7,904	140
Transportasi	4,326	132	4,034	130	3,943	125	3,716	108	2,783	231
Pertanian	1,285	97	1,329	100	1,429	117	1,139	87	1,989	76
Perdagangan dan	4,464	96	3,799	77	4,082	64	1,098	92	1,637	89
Total	**24,562**	**674**	**22,304**	**579**	**23,930**	**564**	**17,800**	**502**	**17,996**	**685**

Source : BPJS Ketangakerjaan, 2023

Meanwhile, at the Central Sulawesi provincial level, the number of kematin due to work accidents will increase in 2022.

Table 2 Number of Deaths Due to Work Accidents in Central Sulawesi Province

Industry	2018	2019	2020	2021	2022
Mining	8	3	3	2	9
Construction:	2	4	2	4	9
Manufacturing	8	6	5	2	3
Transportation	6	6	10	3	3
Agriculture	4	-	3	4	4
Trade and services	3	4	3	4	3
Total	28	23	26	19	50

Source : Central Sulawesi Manpower and Transmigration Office, 2023

In the context of the oil and gas industry, leadership plays an important role in creating a safe and healthy work culture. Previous research has shown that leadership can influence employee safety behavior. Strong and authoritative leadership can motivate employees to adhere to safety procedures, increase vigilance, and reduce risky behavior (Liu &; Long Ma, 2023).

CSMS affects the health and safety of employees in the company (Tualeka, 2023). The low CSMS is relevant to the low awareness of the importance of implementing Occupational Health and Safety (K3) in the work environment (Mahdang, 2023). Several factors that affect the effectiveness of CSMS implementation include commitment and support from management, as well as employee awareness and competence about CSMS (Wardhana, 2022). The implementation of a Construction Safety Management System can help improve safety and risk management on construction projects (Lee, 2023). Construction safety is also influenced by legal systems, regulations, and procedures, as

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well as stakeholders with the roles and norms they form (Rowlinson1, 2022). For this reason, the practice of safety management systems affects productivity in the construction industry (Alameri, 2018). Leadership roles, employee engagement, and stress management are also key factors in maintaining safety in this company. Here are the 10 objectives of this research:

1. Analyzing the influence of Servant Leadership on work safety in the Oil and Gas industry
2. Analyzing the effect of Employee Engagement on Work Safety in the Oil and Gas industry
3. Analyzing the effect of Work Stress on Work Safety in the Oil and Gas industry
4. Analyzing the influence of Servant Leadership on the Contractor Safety Management System (CSMS) in the Oil and Gas industry
5. Analyzing the effect of Employee Engagement on the Contractor Safety Management System (CSMS) in the Oil and Gas industry
6. Analyzing the effect of Work Stress on the Contractor Safety Management System (CSMS) in the Oil and Gas industry
7. Analyzing the effect of the Contractor Safety Management System (CSMS) on occupational safety in the oil and gas industry
8. Analyze the influence of the Contractor Safety Management System (CSMS) in mediating the relationship between Servant Leadership on Work Safety in the Oil and Gas industry
9. Analyze the effect of the Contractor Safety Management System (CSMS) in mediating the relationship between Employee Engagement and Work Safety in the Oil and Gas industry
10. Analyze the effect of the Contractor Safety Management System (CSMS) in mediating the relationship between Work Stress and Work Safety in the Oil and Gas industry

The grand theory in this study is agency theory, where this theory is one of the theories used to explain the relationship between principals (owners or shareholders) and agents (managers or contractors) in an organization. In general, agency theory posits that principals should establish supervisory mechanisms and incentives to ensure that agents act in accordance with the principal's interests. These mechanisms include contracts, reward systems, and monitoring systems. In the context of CSMS, agency theory describes how companies can design effective contracts and incentive systems to motivate contractors to work in accordance with established safety and health standards. Some previous studies related to agency theory in the context of occupational safety entitled Implementation of Contractor Safety Management System in Indonesian construction companies, evaluated the implementation of CSMS in construction companies in Indonesia and found that effective implementation of CSMS can reduce work accidents and improve employee safety (Hidayat, 2018).

This is also supported by research investigating the impact of CSMS on project performance and finding that companies that implement effective CSMS have better project

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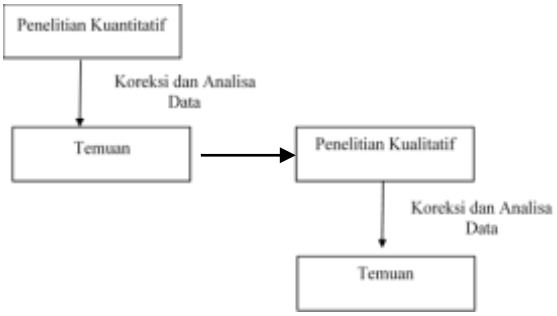
performance, including improved safety and reduced incidents of workplace accidents (Jazayeri, 2019). Furthermore, Le, H. H., &; Nguyen, Q. T. (2020) explained that CSMS on construction projects in Vietnam and found that effective CSMS implementation can reduce work accidents and improve project safety performance. Khoiruzzaman, (2020), in his research successfully evaluated the role of CSMS in improving construction safety performance and found that companies that implement effective CSMS have better safety performance.

Hierarchy of Controls is a systematic and structured approach to reduce risk in the work environment. This theory supports Agency Theory in this study by providing a framework that companies can use to reduce occupational safety (K3) risks faced by workers. In the context of a Contractor Safety Management System (CSMS), the Hierarchy of Controls assists companies and contractors in identifying and implementing the most effective measures to control existing risks. The Hierarchy of Controls consists of five levels: Elimination, Substitution, Technical control, Administrative control, and Personal protective equipment.

This research uses two types of research methods, namely quantitative research with an explanatory approach using PLS SEM Analysis and qualitative research with Focus Group Discussion (FGD) method. Explanatory research is research that focuses on numbers, whether they are statistics or other data objectively to describe the relationship and relationship between one variable and another based on numbers and statistics obtained from the results of quantitative data processing and analysis (Sugiyono, 2019). To support this research using PLS SEM analysis.

METHODS

This research uses two types of research methods, namely quantitative research with an explanatory approach using PLS SEM Analysis and qualitative research with Focus Group Discussion (FGD) method. Explanatory research is research that focuses on numbers, whether they are statistics or other data objectively to describe the relationship and relationship between one variable and another based on numbers and statistics obtained from the results of quantitative data processing and analysis (Sugiyono, 2019). To support this research using PLS SEM analysis.



Picture. 1 Data Analysis with Sequential Explanatory Mixed Methods Source: Hesse (2010) in Azhari (2023)

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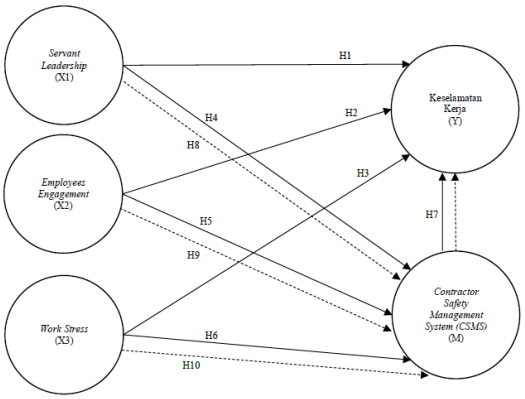
The data analysis method used specifically consists of three steps, namely descriptive analysis, SEM-PLS analysis for hypothesis testing, and qualitative analysis using the FGD method to find managerial solutions. The framework of thought in this study can be described as follows:



Picture. 2 Frame of mind

RESULTS AND DISCUSSION

Testing of Partial Least Square (PLS) Structural Models

In this study, there are two test models by SmartPLS, namely the outer model and the inner model. First, model measurements (outer models) are used to determine validity and reliability, linking reflective indicators with latent variables. It involves three measurement methods. After confirmatory factor analysis, all indicators are considered valid and reliable. The next step is to test the structural model (inner model) as a whole. The evaluation is carried out by considering the percentage of variance (R2) for endogenous latent variables affected by exogenous latent variables. Testing also involves the t-value of bootstrapping to determine the significance of the effect (Indrawati et al., 2017:72). Based on the Partial Least Square estimation method, a Full Structural Model path diagram is obtained as shown in the following figure:

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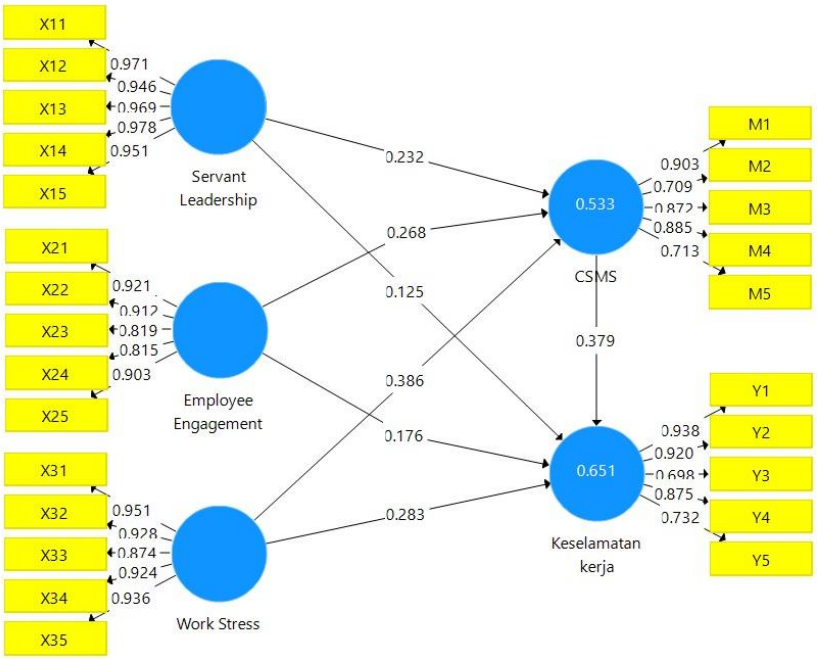

Picture. 3 Full Model Struktural (PLS Algorithm)

Measurement Model Test (Outer Model)

Convergent Validity

Table 3 provides information on the loading factor value for each manifest variable, the loading factor value of some indicators against the latent variable shows >0.6, so all indicators are declared valid.

Table. 3 Convergent Validity Test

Variable	Indicator	Loading Factor	Information
Servant Leadership (X1)	X1.1	0.971	Valid
	X1.2	0.946	Valid
	X1.3	0.969	Valid
	X1.4	0.978	Valid
	X1.5	0.951	Valid
Employee Engagement (X2)	X2.1	0.921	Valid
	X2.2	0.912	Valid
	X2.3	0.819	Valid
	X2.4	0.815	Valid
	X2.5	0.903	Valid
Work Stress (X3)	X3.1	0.951	Valid
	X3.2	0.928	Valid
	X3.3	0.874	Valid
	X3.4	0.924	Valid
	X3.5	0.936	Valid

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Variable	Indicator	Loading Factor	Information
Contractor Safety Management System (CSMS) (M)	M1.1	0.903	Valid
	M1.2	0.709	Valid
	M1.3	0.872	Valid
	M1.4	0.885	Valid
	M1.5	0.713	Valid
Job safety (Y)	Y1.1	0.938	Valid
	Y1.2	0.920	Valid
	Y1.3	0.70	Valid
	Y1.4	0.875	Valid
	Y1.5	0.732	Valid

In table 4, it can be seen that the three latent variables have an AVE value greater than the specified value of 0.5. So that all variables are declared valid in explaining their latent variables which shows that the use of manifest variables meets the requirements of AVE. Therefore, all manifest variables are declared to have met the convergent validity requirements

Tabel 4 Average Variance Extracted (AVE)

	Average Variance Extracted (AVE)
Servant Leadership	0.928
Employee Engagement	0.766
Work Stress	0.852
CSMS	0.674
Job safety	0.703

Discriminant Validity

Based on table 5 of PLS software results above, it can be seen that the *cross loading factor* correlation value of each latent construct for the corresponding indicator is higher than other constructs, so it can be concluded that the indicators used to measure latent variables have met the requirements.

Table 5 Cross Loading Factor Test Results

	Servant Leadership	Employee Engagement	Work Stress	CSMS	Job safety
X11	0.971	0.337	0.516	0.514	0.508
X12	0.946	0.311	0.481	0.478	0.511
X13	0.969	0.331	0.521	0.527	0.513
X14	0.978	0.348	0.507	0.521	0.517
X15	0.951	0.316	0.487	0.485	0.514
X21	0.349	0.921	0.544	0.538	0.567

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X22	0.253	0.912	0.554	0.547	0.537
X23	0.365	0.819	0.426	0.456	0.513
X24	0.266	0.815	0.513	0.440	0.504
X25	0.264	0.903	0.556	0.532	0.527
X31	0.491	0.581	0.951	0.692	0.686
X32	0.515	0.595	0.928	0.609	0.680
X33	0.443	0.450	0.874	0.533	0.572
X34	0.445	0.519	0.924	0.631	0.640
X35	0.512	0.584	0.936	0.596	0.669
M1	0.485	0.465	0.575	0.903	0.657
M2	0.341	0.441	0.506	0.709	0.516
M3	0.473	0.454	0.513	0.872	0.620
M4	0.484	0.549	0.619	0.885	0.681
M5	0.349	0.451	0.515	0.713	0.521
Y1	0.472	0.553	0.630	0.676	0.938
Y2	0.467	0.535	0.596	0.667	0.920
Y3	0.435	0.450	0.557	0.493	0.698
Y4	0.427	0.523	0.608	0.684	0.875
Y5	0.432	0.467	0.563	0.535	0.732

Based on the results of table 6 shows that all gains in the root value of each variable are higher than the correlation, it can be concluded that the model has good discriminant validity

Tabel 6 Cooker-Lacker Criterion

	CSMS	Employee Engagement	Job safety	Servant Leadership	Work Stress
CSMS	0.821				
Employee	0.576	0.875			
Engagement	0.735				
Job safety	0.525	0.606	0.838		
Servant	0.666	0.341	0.532	0.963	
Leadership		0.594			
Work Stress			0.705	0.522	0.923

Reliability Test

From the test results in table 7 it can be seen that the Composite Reliability (CR) value is greater than 0.7 and the Cronbachs Alpha value is greater than 0.6, so it can be concluded that reliable data shows that all indicators have consistency in measuring each variable.

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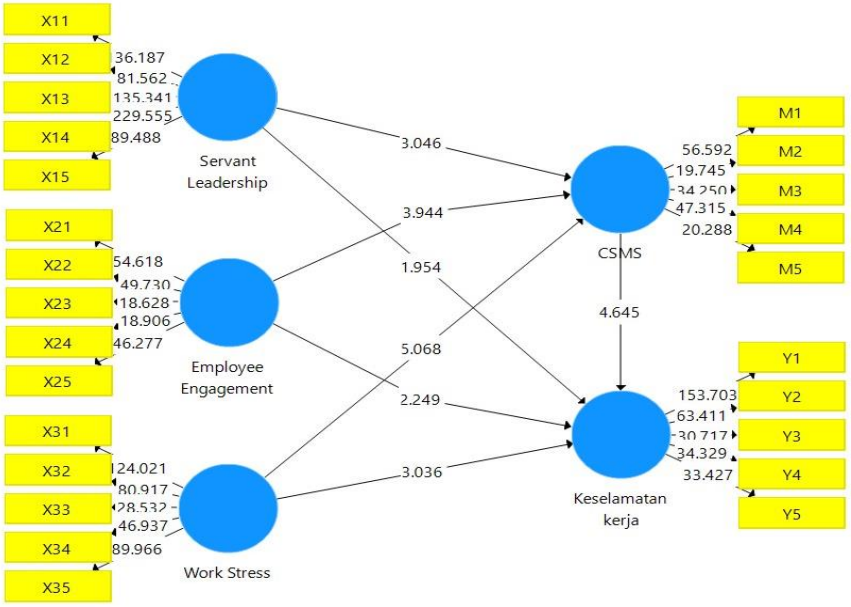
Table 7 Composite Reliability (CR) and Cronbach's Alpha Test Results

	Cronbach's Alpha	Composite Reliability
Servant Leadership	0.980	0.985
Employee Engagement	0.923	0.942
Work Stress	0.956	0.966
CSMS	0.876	0.911
Job safety	0.890	0.921

Structural Model Test (Inner Model)

The test is carried out by looking at the path value to see whether the influence is significant or not seen from the t value of the path value (t value can be obtained by boothstraping). Here is an image of the results of boothstraping conducted in this study:



Picture 4 Boothstraping

R Square Test

Through the value of the coefficient of determination (R-square) contained in Table 13, it can be known that the R square value *of the Contractor Safety Management System* variable is 0.533, which shows that the variable of *the Contractor Safety Management System* can be explained by 53.3% by the variables *Servant Leadership, Employee Engagement* and *Work Stress*.

The R square value of the occupational safety variable is 0.651, which shows that the work safety variable can be explained by 65.1% by the variables *Servant Leadership, Employee Engagement, Work Stress* and *Contractor Safety Management System*.

Table 8 R Squares Results

	R Square
CSMS	0.533
Job safety	0.651

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Based on table 9, it can be seen that the Servant Leadership variable has the greatest influence on work safety by having an effect size value of 0.192.

Tabel 9 F2 Effect Size Test

Influence	Nilai Effect Size	Information
Employee Engagement --> CSMS	0.030	Little Effect
Servant Leadership --> CSMS	0.052	Little Effect
Work Stress --> CSMS	0.104	Little Effect
Employee Engagement --> Job safety	0.083	Little Effect
Servant Leadership --> Job safety	0.100	Little Effect
Work Stress --> Job safety	0.170	**Medium Influence**
CSMS --> Job safety	0.192	**Medium Influence**

Goodness of Fit Evaluation

$$Gof = \sqrt{rata - rata\ AVE\ x\ rata - rata\ R2}$$

$$Gof = \sqrt{0,785\ x\ 0,692}$$

$$Gof = \sqrt{0,465} = 0,682$$

Based on the calculation results, a Gof value of 0.682 was obtained, so that the goodness of fit (GoF) model included in the GoF category was quite high.

Hypothesis Test

The hypothesis in this study will be tested using path coefficients and t values to see if there is a significant effect or not. In addition, the results of the path significance test also show the value of the parameter coefficient (original sample). The parameter coefficient shows the significance value of the influence of each research variable.

Table 10 Path Significance Test

	Hipotesis	Original Sample (O	T Statistics (|O/STDEV|)	P Values
H1	*Servant Leadership* -> Job safety	0.125	1.989	0.050
H2	*Employee Engagement* -> Job safety	0.176	2.249	0.025
H3	*Work Stress* -> Job safety	0.283	3.036	0.002
H4	*Servant Leadership* -> CSMS	0.232	3.046	0.002
H5	*Employee Engagement* -> CSMS	0.268	3.944	0.000
H6	*Work Stress* -> CSMS	0.386	5.068	0.000
H7	CSMS -> Job safety	0.379	4.645	0.000

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	Hipotesis	Original Sample (O	T Statistics (|O/STDEV|)	P Values
H8	*Servant Leadership* -> CSMS -> Job safety	0.088	2.535	0.011
H9	*Employee Engagement* -> CSMS -> Job safety	0.102	3.021	0.003
H10	*Work Stress* -> CSMS -> Job safety	0.146	3.525	0.000

In this study, researchers used a confidence level of 95%. The path coefficient score indicated by the T-Statistic value must be above 1.96 for the two-tailed hypothesis.

Variance Accounted For (VAF) Test

Based on the results of the path significance test, a VAF was then made, the results of which were made in table 16. Where from the table it appears that

a. The Influence of Servant Leadership on Work Safety Through the Contractor Safety Management System has a VAF value of 41.3%, meaning that CSMS mediation influencers are in the Partian Mediation category.
b. The Effect of Employee Engagement on Work Safety Through the Contractor Safety Management System has a VAF value of 36.6%, meaning that CSMS mediation influencers are in the Partian Mediation category.
c. The Effect of Work Stress on Work Safety Through the Contractor Safety Management System has a VAF value of 34.1%, meaning that CSMS mediation influencers are in the Partian Mediation category.

Tableau, 11. VAF Test

	a	b	c	$\frac{a \times b}{(a \times b) + c}$	%	VAF
Servant Leadership -> CSMS -> Job safety	0.232	0.379	0.125	0.413	41.3%	Partial Mediation
Employee Engagement -> CSMS -> Job safety	0.268	0.379	0.176	0.366	36.6%	Partian Mediation
Work Stress -> CSMS -> Job safety	0.386	0.379	0.283	0.341	34.1%	Partian Mediation

From the results of the analysis above, a table of the results of hypothesis testing in this study is illustrated as follows:

Tabe 12 Research Hypothesis Test Results

H	Research Hypothesis	Result	Conclusion
H1	*Servant Leadership* affects work safety in the Oil and Gas industry	The resulting statistical T value of 1.989 is greater than the table t value (1.96)	H0 rejected, H1 Accepted *Servant Leadership* has a direct effect on Work Safety.

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H	Research Hypothesis	Result	Conclusion
		and the P-value of 0.050 < 0.05.	
H2	*Employee Engagement* affects work safety in the Oil and Gas industry	The resulting statistical T value of 2.449 is greater than the table t value (1.96) and the P-value of 0.025 < 0.05.	H0 rejected, H2 Accepted *Employee Engagement* has a direct effect on Work Safety
H3	*Work Stress* affects work safety in the Oil and Gas industry	The resulting statistical T value of 3.036 is greater than the table t value (1.96) and the P-value of 0.002 < 0.05.	H0 rejected, H3 Accepted *Work Stress* has a direct effect on Work Safety.
H4	*Servant Leadership* influences the *Contractor Safety Management System* (CSMS) in the Oil and Gas industry	The resulting statistical T value of 3.046 is greater than the table t value (1.96) and the P-value of 0.000 < 0.05	H0 Rejected, H4 Accepted *Servant Leadership* has a direct influence on the *Contractor Safety Management System*.
H5	*Employee Engagement* affects the *Contractor Safety Management System* (CSMS) in the Oil and Gas industry	The resulting statistical T value of 3.944 is greater than the table t value (1.96) and the P-value of 0.000 < 0.05	H0 Denied, H5 accepted *Employee Engagement* has a direct effect on the *Contractor Safety Management System*.
H6	*Work Stress* affects the *Contractor Safety Management System* (CSMS) in the Oil and Gas industry	The resulting statistical T value of 5.068 is greater than the table t value (1.96) and the P-value of 0.000 < 0.05.)	H0 Rejected, H6 Accepted *Work Stress* directly affects the *Contractor Safety Management System*.
H7	*Contractor Safety Management System* (CSMS) affects work safety in the oil and gas industry	The resulting statistical T value of 4.645 is greater than the table t value (1.96) and the P-value of 0.000 < 0.05.	H0 Rejected, H7 Accepted *Contractor Safety Management System* has a direct effect on Work Safety.

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H	Research Hypothesis	Result	Conclusion
H8	*Contractor Safety Management System* (CSMS) has an influence in mediating *Servant Leadership* on work safety in the Oil and Gas industry	The resulting statistical T value of 2.535 is greater than the table t value (1.96) and the P-value of 0.011 < 0.05	H0 Rejected, H8 Accepted *Servant Leadership* has an indirect influence on Work Safety through the *Contractor Safety Management System*.
H9	*Contractor Safety Management System* (CSMS) has an effect in mediating *Employee Engagement* on work safety in the Oil and Gas industry	The resulting statistical T value of 3.021 is greater than the table t value (1.96) and the P-value of 0.003 < 0.05	H0 Rejected, H9 Accepted *Employee Enggagement* has an indirect effect on Work Safety through the *Contractor Safety Management System*.
H10	*Contractor Safety Management System* (CSMS) has an effect in mediating *Work Stress* on work safety in the Oil and Gas industry	The resulting statistical T value of 3.525 is greater than the table t value (1.96) and the P-value of 0.000 < 0.05	H0 Rejected, H10 Accepted *Work Stress* has an indirect effect on Work Safety Through the *Contractor Safety Management System*.

Qualitative Testing

In this study, qualitative methods were used through Focus Group Discussions (FGD). The results are seen in Table 13, where this FGD involved 20 respondents with details of 1 operational manager, 1 human resource manager, 1 occupational safety supervisor, 12 operational employees, 4 contractor representatives, and 1 occupational safety expert.

Table 13 FGD Discussion Results

No	Factors/variables	Influence on occupational safety
1	*Servant Leadership*	Creating a strong safety culture and reducing incidents
2	*Employee Engagement*	Encourage active participation in safety practices and reduce incidents
3	*Work Stress*	Reducing stress at work is important to improve safety.
4	*Contractor Safety Management System* (CSMS)	Provide frameworks and resources for safety practices, manage employee stress, and improve safety

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From the results of the FGD, there are several things that need to be considered to improve work safety in the oil and gas industry, including:

a. Increase Management Commitment: Demonstrate a strong commitment to safety as the company's core value. Implement programs such as (1) Implementing a clear and consistently applied safety code of ethics, (2) Organizing special training for management
b. related to occupational safety, (3) Implementing a zero-accident approach by setting zero accident targets, and (4) Establishing a reward system for recognition of safety achievements.
c. Improve Training Programs: Provide comprehensive and ongoing safety training to employees and contractors such as: (1) Provide regular training on safety procedures to all employees. (2) Organize special training for contractors that involves them in the
d. safety culture of the company.
e. Strengthening Partnerships with Contractors: Build strong relationships with contractors and ensure compliance with safety standards such as: (1) Establish open communication with contractors to understand and address shared safety challenges, (2) Ensure that contractors comply with company safety standards through regular audits and evaluations, and (3) Build ongoing partnerships with contractors to create a safe work environment together.

CONCLUSION

Servant Leadership has a significant effect on Work Safety. Affirm that service-based leadership approaches have a positive impact on employee safety. Employee Engagement has a significant effect on Work Safety. Shows that employee engagement is directly related to better levels of safety. Work Stress has a significant effect on Work Safety. Highlights that work stress can be a factor that affects the level of occupational safety in the workplace. Servant Leadership has a significant effect on the Contractor Safety Management System (CSMS). Demonstrate that service leadership has a strong positive impact on the contractor's safety management system. Employee Engagement has a significant effect on the Contractor Safety Management System (CSMS). Highlights that employee engagement significantly affects the success of the contractor's safety management system. Work Stress has a significant effect on the Contractor Safety Management System (CSMS). Indicates that the level of work stress can affect the effectiveness of the contractor's safety management system. Contractor Safety Management System (CSMS) has a significant effect on Work Safety. Affirm that good implementation of the contractor's safety management system contributes positively to overall occupational safety. Contractor Safety Management System (CSMS) is able to mediate the influence of Servant Leadership on Work Safety. Present evidence that CSMS acts as a mediator in the relationship between service-based leadership and occupational safety. Contractor Safety Management System (CSMS) is able to mediate the effect of Employee Engagement on Work Safety. Demonstrate that CSMS plays the role of mediator

between employee engagement and occupational safety. Contractor Safety Management System (CSMS) is able to mediate the effect of Work Stress on Work Safety. Highlighting that CSMS can act as an intermediary in the effect of work stress on employee safety levels.

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