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Editorial Office: Rzeszow University of Technology, The Faculty of Management,
10 Powstańców Warszawy Ave., 35-959 Rzeszów, phone: +48 17 8651383, e-mail: mmr1@prz.edu.pl
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Additional information and an imprint – p. 115

CONTENTS

From the Editorial Committee

We are giving you the next Vol. 29, No. 3(2024) issue of the Quarterly of the Faculty of Management of the Rzeszow University of Technology entitled “Modern Management Review”.

The primary objective of the Quarterly is to promote publishing of the results of scientific research within economic and social issues in economics, law, finance, management, marketing, logistics, as well as politics, corporate history and social sciences.

Our aim is also to raise the merits and the international position of the Quarterly published by our Faculty. That is why we provided foreign Scientific Council, as well as an international team of Reviewers to increase the value of the scientific publications.

The works placed in this issue include many assumptions and decisions, theoretical solutions as well as research results, analyses, comparisons and reflections of the Authors.

We would like to thank all those who contributed to the issue of the Quarterly and we hope that you will enjoy reading this issue.

With compliments
Editorial Committee

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Abdul-Azeez Adeniyi ALAO[1]
Opeoluwa Paul FAKAYODE[2]
Oluwasegun Temitayo ODUNSI[3]

NARROWING THE EXPECTATION GAP IN NIGERIAN QUOTED FIRMS VIA EMPLOYEES' SHAREHOLDING

This study examined the influence of employees' shareholding on the Expectation Gap (EG) in auditing, focusing on Nigerian quoted firms. A cross-sectional survey research design was adopted for the study, along with the purposive sampling method. Three hundred and ten (310) responses were used for the analysis. The data were analysed using the Partial Least Square Structural Equation Model (PLS-SEM) at a 5 percent level of significance. The result showed that employees' shareholding ($\beta = 0.374$; $t = 7.362$) has a significant positive effect on the external auditor's independence factor. The study concluded that employees' participation is a good practice to be employed by the Nigerian quoted firms in addressing the challenge of EG in those firms. Therefore, the study recommended that quoted firms should strengthen the independence of external auditors by allowing employees' participation in the ownership structure to reduce the EG.

Keywords: employees' shareholding, expectation gap, external auditors, PLS-SEM, Nigerian quoted firms.

1. INTRODUCTION

The audit profession engages in an essential economic activity that helps protect stakeholders' interests in corporate entities by reinforcing their trust in financial reporting processes. The Expectation Gap (EG), a worldwide issue, affects the perception and effectiveness of auditing. The EG refers to the difference between what the general public and other stakeholders expect from auditors and what auditors believe their responsibilities entail. This gap varies in intensity and complexity across different regions due to cultural, economic, and legislative factors. The EG is a multifaceted problem with global variations, but regulatory changes, improved communication, audit education, and corporate

[1] Abdul-Azeez Adeniyi Alao, Olabisi Onabanjo University, Ago-Iwoye, Nigeria; e-mail: alao.adeniyi@oouagoiwoye.edu.ng (corresponding author). ORCID: 0000-0003-1710-9734.
[2] Opeoluwa Paul Fakayode, Olabisi Onabanjo University, Ago-Iwoye, Nigeria; e-mail: fakayode.opeoluwa@oouagoiwoye.edu.ng. ORCID: 0009-0007-7897-7777.
[3] Oluwasegun Temitayo Odunsi, Olabisi Onabanjo University, Ago-Iwoye, Nigeria; e-mail: odunsi.oluwasegun@oouagoiwoye.edu.ng. ORCID: 0009-0009-5621-3658.

governance practices/principles are some of the crucial strategies to bridge the gap in any environment.

Accordingly, it has been reported by Alao et al. (2022) and Alao (2024) that EG can be reduced in any society through "defensive and constructive approaches". "The defensive approach entails the use of audit education while the constructive approach considers the adoption of corporate governance principles/practices in narrowing the EG". Additionally, it was previously stated by Soyemi et al. (2021) that one of the key activities that both ensures the correctness of the financial information contained in financial reporting systems and stimulates them is corporate governance. Alao et al. (2020) defined corporate governance as the relationship between shareholders and the people in charge of overseeing both the management of corporate entities and governance.

Furthermore, the two (2) categories of corporate governance mechanisms/factors are internal and external (Almutairi, Quttainah, 2019; Aditya, 2020; Payne, Moore, 2022). Board structures, ownership agreements, and managerial incentives are examples of internal mechanisms, according to Payne and Moore (2022), whereas external elements are those that come from outside sources and support internal governance systems. Furthermore, according to the information provided by the "Association of Chartered Certified Accountants" (ACCA), the external mechanisms of corporate governance include the regulatory framework, market discipline, external auditors, disclosure, and transparency, while the internal factors of corporate governance include the board of directors, internal controls and risk management, executive compensation, ethical standards, and corporate culture (ACCA, 2020). Additionally, the above submissions are in compliance with the Nigerian Code of Corporate Governance (NCCG, 2018), which governs the management of corporate companies.

More so, Alao (2024) further established the existence of EG in the Nigerian listed enterprises, lending confirmation to earlier research on the EG's global subsistence. Therefore, one of the hypothetical statements in the work of Alao et al. (2023) – that is, "employees' shareholding has no significant effect on the independence factor of the external auditor" – forms the basis of the current investigation. The study proposed that allowing employees to take part in the ownership structure of Nigerian listed companies can help maintain the independence of the external auditors, hence reducing the EG. Employees' shareholding is one of the internal mechanisms of corporate governance as contained in the above documents/submissions (NCCG, 2018; ACCA, 2020; Payne, Moore, 2022). As a result, the present study validates the aforementioned hypothetical statement.

Therefore, the alignment of interests between employees and shareholders is a key benefit of employee shareholding which can improve the quality of financial oversight especially where the employee possesses basic accounting/finance knowledge and potentially narrow the ES. Therefore, when employees become shareholders, their perspectives shift to include not only their roles as workers but also their interests as owners (Pendleton, Robinson, 2011). According to Fitzsimons and Douglas (2011), companies with significant employee ownership may need to improve internal communication and transparency, which could help in narrowing the EG by aligning the employees' expectations with the auditors' responsibilities.

Consequently, by understanding how employee ownership influences perceptions and expectations of audits, companies can implement better governance practices and improve the reliability of financial reporting. Therefore, adopting the constructive approach and improving on the works of Alao et al. (2022), and Alao et al. (2023), the present study

investigated the effect of employees' shareholding on the EG in Nigerian quoted firms. The study was further divided into five (5) sections. The first section addressed the introduction, literature review, and development of the hypothesis were presented in the second section, the third section dealt with the methodology, the fourth section displayed the results and discussions, and the fifth section highlighted the conclusion and recommendations.

2. LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESIS

The term EG was initially coined by Liggio in 1974 as substantiated in the literature. Meanwhile, Lee's investigation in the United Kingdom in 1969 marked the first exploration of public perceptions regarding auditors' roles (Porter, 1990). Conceptually, Liggio (1974) described EG as the difference between the expected performance levels perceived by financial statement users and those anticipated by auditors. Recently, Ashibogwu et al. (2023) characterised EG as the discrepancy between users' expectations and the audit report's contents, while Alao (2024) viewed EG as the divergence in auditors' and stakeholders' opinions on auditors' responsibilities. Furthermore, Alao et al. (2022) categorised EG into four (4) factors: going concern, independence, responsibility, and reliability. This study focused on the independence factor as a proxy for EG, specifically external auditors' independence.

On the other hand, employees' shareholding has been used in the literature as employees' ownership, employees' participation, and Employee Stock Ownership Plan (ESOP). According to Cheng and Ji (2021), the concept of employees' shareholding/ESOP was first introduced in the mid-1950s by an American economist, Louis Kelso. Kelso described ESOP as a financial arrangement that deals with funds provision for a business as well as making employees business owners. Maghraoui and Zidai (2016) conceptualised employee ownership as – a source of funds for corporate entities; a means of supporting business growth; and a tool for improving productivity and profitability. Conceptually, employees' shareholding is described in the study as the level of participation of the firm's employees in the ownership structure of the entities where they are employees. Above all, Bova (2012) posited that corporate entities with a policy of employee participation usually employ a more transparent information communication that benefits all investors.

Theoretically, the present study is anchored on the "theory of inspired confidence". "The theory originated from the work of Dutch Professor Theodore Limperg, specifically his publication 'Theory of inspired confidence' in 1932". Theodore Limperg, a Dutch professor who lived in the early 1900s, developed the theory of inspired confidence, which offers a fundamental viewpoint on the purpose and benefits of auditing. This according to "Theodore Limperg" helps promote the smooth operation of capital markets, hence the main goal of an audit is to increase stakeholders' trust in the financial statements that a company provides. This idea highlights the auditor's responsibility in bridging the gap between the firm management and its stakeholders through the validation of financial information, which forms the basis for a large portion of modern auditing practice.

Furthermore, the "theory of inspired confidence", which emphasises the crucial role auditors play in promoting credibility and trust in financial reporting, continues to be a pillar of auditing philosophy. Finally, the findings from this study corroborate Limberg's idea of the "theory of inspired confidence". Therefore, the "theory of inspired confidence" is conceptualised in this study as a theory that explains enhancing stakeholders' assurance in the audit procedures of the Nigerian quoted firms via upholding the independence of

external auditors by creating avenues for employees' shareholding thereby narrowing the EG in our society corporate entities.

Investigating the subsistence of EG in auditing, Porter (1990) examined the nexus between the expectation gap and the duties of external auditors in New Zealand. The study employed a qualitative approach to gather the required data and used non-parametric tests to establish the differences in the opinions of the target respondents. Findings from the study explained the audit expectation-performance gap which gave room for the attempts to reduce the gap. Furthermore, Humphrey et al. (1993b) investigated the perceptions of stakeholders on the issues regarding EG in Britain. The authors adopted the survey design by administering a questionnaire among the stakeholders while Analysis of Variance (ANOVA) was employed to test the formulated hypotheses. The study's findings revealed differences in the opinions of the auditors and the stakeholders on auditors' responsibilities.

Corroborating the submission of Porter (1990), Shbeilat (2013) investigated the influence of "The Jordanian Corporate Governance Code" (JCGC) on the dependability of audit reports and the extent to which the JCGC assists in reducing the EG. The study design was based on a mixed-method approach. The results demonstrated that the JCGC's principles helped in narrowing the EG. Similarly, Shebeilat et al. (2017) adopted a qualitative approach to examining investors' evaluation of the level to which corporate responsibility can address the EG. The authors considered the JCGC while the results showed that in Jordan, a robust corporate accountability system played a remarkable role in reducing the EG.

Also, Alaraji (2017) utilised the analytical descriptive method to assess how corporate governance principles influence the reduction of the EG between external auditors and stakeholders in Iraq. The results indicated that implementing corporate governance practices had a positive effect on narrowing the EG within the external audit career in Iraq. Meanwhile, Akther and Xu (2020) examined the effect of EG on stakeholders' assurance in Bangladesh. The authors employed the Structural Equation Model to test the hypotheses just like the present study. The results showed that EG harms stakeholders' confidence in Bangladesh. From the Nigerian environment, Fijabi (2020) examined the nexus between corporate governance and auditors' expectations with a focus on Pension Fund Administrators (PFAs). The study employed the Pearson Product Moment Correlation coefficient to test the connection between the NCCG and the EG in Nigeria. Findings from the study revealed that effective accountability as a corporate governance practice has a positive contribution to the expectation gap.

Kozłowski (2014) conducted a theoretical and empirical review of studies on the nexus between employees' participation and economic results of firms. After a thorough review, the author concluded that various programmes of employees' participation in corporate entities have a positive influence on the performance of those companies. Maghraoui and Zidai (2016) conducted an empirical study to validate the causality nexus between employee ownership and firm performance in French corporate entities. Using the data of one hundred and twenty (120) French quoted firms, employee ownership was measured in terms of the percentage of shares held by the companies' employees. Findings from the study revealed that employee ownership has a positive relationship with firms' performance.

Cheng and Ji (2021) investigated the effect of employees' stock ownership plans on the cost of capital of three thousand, three hundred and sixty (3,360) Chinese-listed corporate entities from 2014 to 2018. Regression models were used to test the hypotheses. The price/earnings-to-growth (PEG) ratio was used to measure the cost of equity capital while

a dummy variable was employed to proxy employees' stock ownership plan. The results showed that employees' stock ownership plan has a positive influence on the cost of capital of small enterprises and non-state-owned enterprises. Abdelhamid (2022) examined the effect of employees' share ownership on corporate governance of one hundred ten (110) French-listed companies from 2009 to 2012. The author employed panel data regression models in testing the hypotheses. The findings revealed a significant positive effect of employees' share ownership and employee participation on corporate governance.

Based on the above submissions especially that of Porter (1990); Alaraji (2017); and Fijabi (2020), this study was conducted to ascertain the impact of employees' shareholding, one of the components of internal corporate governance practices, in narrowing the EG in auditing profession hence, study's hypothesis is formulated thus;

Ho: "Employees' shareholding has no significant effect on the independence factor of the external auditor"

3. METHODOLOGY

This study aimed to investigate the nexus between employees' shareholdings and the EG in Nigerian quoted firms hence, the survey research design was employed. The process involved the administration of a questionnaire among directors, external auditors, and shareholders of quoted firms in Nigeria using the purposive sampling technique. Meanwhile, a pilot test was earlier conducted physically in Abeokuta, Ogun State among twenty-three (23) respondents and, on that basis, the questionnaire was modified accordingly before the final administration. Consequently, the adjusted questionnaire was shared among the respondent groups via Google Forms.

The study's questionnaire was designed for respondents to select the appropriate option from a list of alternatives provided. The questionnaire was divided into two (2) parts. Part A entailed respondents' details while Part B focused on questions relating to the hypothesis. Part B comprised Likert-scale questions on the independence of external auditors and employees' shareholding. Seven (7) questions were raised on the independence of external auditors and six (6) on employees' shareholding. The questions were rated on a 4-point Likert scale (Strongly Agree, Agree, Disagree, and Strongly Disagree). The questionnaire was adapted from the works of Akther and Xu (2020), Olojede et al. (2020); Nguyen and Nguyen (2020); Saidu and Gidado (2018); Enyi et al (2012); Schelluch and Gay (2006). Three hundred and ten (310) valid responses were used for the study. The information about the respondents is provided in Table 2 below.

In testing the nexus between employees' shareholdings and the AEG, the Partial Least Square Structural Equation Model (PLS-SEM) was employed via SmartPLS version 4.0. Structural Equation Modeling (SEM) is a statistical analysis technique that combines factor analysis and multiple regression analysis to analyse the underlying relationships among latent constructs or variables, providing insights into the structural relationships within a dataset. Consequently, the use of PLS-SEM is adjudged appropriate for this study because the study employed latent constructs (constructs that are measured via manifest questions in the questionnaire). Secondly, the study's objective is tailored toward prediction.

The use of PLS-SEM for this kind of study is supported by previous studies of Sarstedt et al. (2021); Akther and Xu (2020); and Adedeji (2020). Meanwhile, as stated in the introductory section, the present study was conducted to validate one of the hypothetical statements postulated in the work of Alao et al. (2023).

Table 1. Reliability Test

S/N	Constructs	Items	Cronbach Alpha Coefficients
1.	Employees Shareholdings	6	0.84
2.	Independence Factor	7	0.88

Source: SPSS Output (2024).

Table 1 above shows the results from the pilot test. The test was conducted to test the reliability of the items contained in the questionnaire. The Cronbach Alpha coefficients range from 0.84 to 0.88 (which is greater than 0.70) showing that it is within the acceptable range as outlined by George and Mallery (2003).

4. RESULTS AND DISCUSSIONS

The study employed SmartPLS version 4 in testing the formulated hypothesis. Consequently, the Confirmatory Factor Analysis (CFA) otherwise known as measurement model analysis was conducted on the latent variables. The process led to the deletion of certain manifest latent variables whose factor loadings are below the threshold of 0.50. This is supported by the rules governing the application of SmartPLS (Ramayah et al., 2018). Therefore, Independence Factor (IF) 1 and 2 as well as Employees' Shareholdings (ES) 4 and 5 were deleted accordingly.

Table 2. Respondents' Data

Variables	Label	Frequency	Percentage
Respondents' Group	Auditors	201	64.8
	Directors	34	11.0
	Shareholders	75	24.2
	Total	**310**	**100.0**
Gender	Female	268	86.5
	Male	42	13.5
	Total	**310**	**100.0**
Age (Years)	Less than 30	21	6.8
	30 – 39	43	13.9
	40 – 49	105	33.9
	50 – 59	104	33.5
	60 and above	37	11.9
	Total	**310**	**100.0**
Highest Educational Qualification	OND/NCE	7	2.3
	B.Sc./HND	113	36.5
	MBA/M.Sc.	148	47.7
	PhD	35	11.3
	Others	7	2.3
	Total	**310**	**100.0**
Professional Qualification	ACA/CNA/ACCA	94	30.3
	ACTI	25	8.1
	CISA/CFA	2	0.6
	FCA/FCNA/FCCA	120	38.7
	Others	69	22.3
	Total	**310**	**100.0**

Source: Field Survey (2024).

Table 2 above exhibited the demographic pattern of the study's respondents. The table showed that 65% of the respondents are external auditors hence, they possess the required expertise about the subject matter; 79% of the respondents are above 40 years of age hence, the majority of the respondents are adults; 37% have B.Sc./HND while 48% have MBA/M.Sc. hence, the majority of the respondents possess the required educational qualifications; 39% have FCA/FCNA/FCCA hence, the majority of the respondents are professionally qualified to understand the subject matter being investigated in the study.

Table 3. Descriptive and Normality Analysis

Name	Type	Missings	Mean	Median	Scl. min	Scl. Max	Obs. min	Obs. Max	Std dev.	Excess kurtosis	Skws	Cramér-von Mises p value
IF3	ORD	0	3.558	4	1	4	1	4	0.575	1.330	-1.099	0.000
IF4	ORD	0	3.813	4	1	4	1	4	0.422	7.005	-2.377	0.000
IF5	ORD	0	3.761	4	1	4	1	4	0.509	6.423	-2.365	0.000
ES1	ORD	0	3.252	3	1	4	1	4	0.580	0.584	-0.294	0.000
ES2	ORD	0	3.094	3	1	4	1	4	0.628	0.113	-0.230	0.000
ES3	ORD	0	3.077	3	1	4	1	4	0.672	-0.122	-0.285	0.000

Source: SmartPLS Output (2024).

The results of the descriptive and normality tests are displayed in Table 3. The table revealed the minimum and maximum values as 1 and 4 respectively. The values of standard deviation ranged from 0.422 to 0.672; kurtosis ranged from -0.122 to 7.005; and skewness ranged from -2.377 to -0.230. All the values are within the acceptable range as recommended by Bryne (2010), Kline (2011), and Ryu (2011). Besides, the p-value for each of the manifest variables is 0.000 hence, they are significant at all levels.

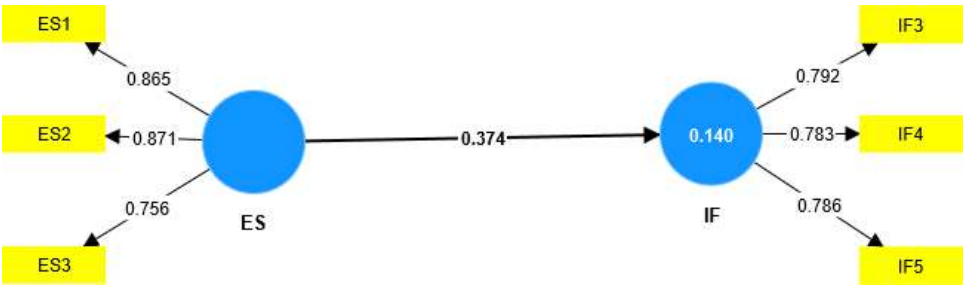

Figure 1. Measurement Model

Source: SmartPLS Output (2024).

Figure 1 above displayed the measurement model while the figures contained therein were further analysed in Table 4. From the table, the factor loadings ranged from 0.756 to 0.871 which are greater than the threshold of 0.70 as recommended by [Hair Jr. et al., (2010); Hair Jr. et al., (2017)]; Cronbach Alpha and composite reliability values ranged from 0.705 to 0.871 while Average Variance Extracted (AVE) values ranged from 0.620 to 0.693 which are higher than the threshold of 0.50 [Hair Jr. et al., (2017); Ramayah et al., (2018)]. Based on the results, it is reported that the study has no problem with

the constructs' convergent validity and reliability as each of the values computed is higher than the respective threshold.

Table 4. Constructs' Convergent Validity and Reliability Analysis

Constructs	Measurement Items	Factor Loadings	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Average Variance Extracted (AVE)
ES	ES1	0.865	0.783	0.824	0.871	0.693
	ES2	0.871				
	ES3	0.756				
IF	IF3	0.792	0.705	0.721	0.830	0.620
	IF4	0.783				
	IF5	0.786				

Source: SmartPLS Output (2024).

Table 5. Fornell & Larcker's Analysis Test

	ES	IF
ES	**0.832**	
IF	0.374	**0.787**

Source: SmartPLS Output (2024).

Table 6. Heterotrait-Monotrait ratio of correlations (HTMT) Test

	ES	IF
ES		
IF	0.462	

Source: SmartPLS Output (2024).

The discriminant validity results are shown in Tables 5 and 6 above. Fornell and Larcker's test revealed that the values on the diagonal ranged from 0.787 to 0.832 and these are higher than the off-diagonal value 0.374. Furthermore, the HTMT test revealed a value of 0.462 which is below the threshold of 0.90. Therefore, for each of the tests, discriminant validity is justified.

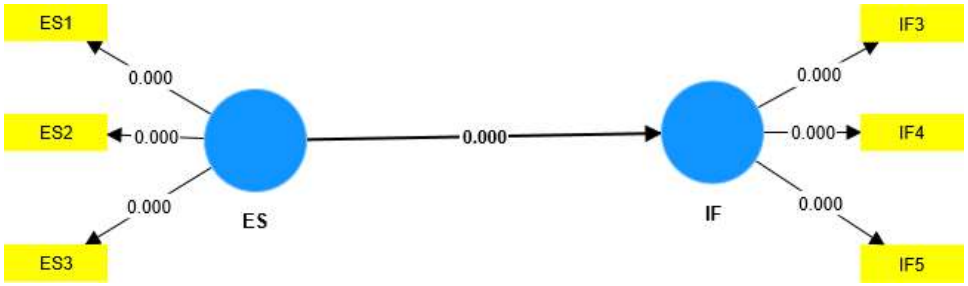

Figure 2. Structural Model

Source: SmartPLS Output (2024).

Figure 2 above shows the study's structural model analysis. The bootstrapping with 5000 resamples that was employed with the aid of PLS-SEM assisted in the determination of path coefficients, standard errors, t-value, and significant levels to examine the relevance of the hypothesised nexus between employees' shareholdings and external auditors' independence factor.

Table 7. Model Fit Test

	Saturated model	Estimated model
SRMR	0.113	0.113
d_ULS	0.266	0.266
d_G	0.095	0.095
Chi-square	193.35	193.35
NFI	0.644	0.644

Source: SmartPLS Output (2024).

Table 7 above displays the results of the Goodness of Fit (GoF). Standardised Root Mean Square Residual (SRMR) equals 0.113 which is a bit higher than 0.10 while Normed Fit Index (NFI) equals 0.64 which is below 1 but close to 1 hence, the model is a good fit.

Table 8. Collinearity Check Test

	VIF
ES1	1.586
ES2	1.899
ES3	1.574
IF3	1.174
IF4	1.727
IF5	1.719

Source: SmartPLS Output (2024).

Table 8 above shows the results of the collinearity check test. For the test, the values for the Variance Inflation Factor (VIF) ranged from 1.174 to 1.899 which is below 5 hence, there is no collinearity problem with the data set.

Table 9. Path Coefficients Test

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
ES -> IF	0.374	0.380	0.051	7.362	0.000***

*Note: *** implies 1% Significance Level*

Source: SmartPLS Output (2024).

Table 9 above reveals the results for the path coefficients. The coefficient value (β) equals 0.374; the *t*-value equals 7.362 while the *p*-value equals 0.000. The coefficient value of 0.374 indicated a positive effect of employees' shareholdings on the external auditors' independence factor while the *t*-value of 7.362 and *p*-value of 0.000 indicated a significant effect of employees' shareholdings on the external auditors' independence factor.

Meanwhile, the *p*-value of 0.000 is an indication of significance at all levels of significance (10%, 5%, and 1%). Therefore, the null hypothesis which stated that employees' shareholding has no significant effect on the external auditors' independence factor is rejected. Above all, it can be concluded that employees' shareholding has a significant positive effect on the external auditors' independence factor.

Furthermore, the study revealed that employees' shareholdings should be encouraged in corporate entities to guarantee external auditors' independence and stakeholders' confidence; ensure that external auditors conduct their work without bias and undue influence; and also ensure there is no form of influence by the management or any third party in the discharge of external auditors' responsibilities.

Table 10. Coefficient of Determination (R^2)

	R-square	**R-square adjusted**
IF	0.14	0.137

Source: SmartPLS Output (2024).

Table 10 shows the results for the study's coefficient of determination (R^2). The R^2 value of 0.14 revealed that fourteen (14) percent variation in the endogenous construct (IF) is accounted for by the exogenous variable (ES) hence, according to Cohen (1988), ES has a moderate level of predictive accuracy on IF.

Table 11. Assessment of Effect Size (f^2)

	ES	**IF**
ES		0.162
IF		

Source: SmartPLS Output (2024).

Table 11 shows the result for the effect size (f^2). From the table, ES has a value of 0.162 hence, according to Cohen (1988), ES has a medium effect on IF.

Table 12. Assessment of Predictive Relevance for Manifest Variable

	Q^2predict	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE
IF3	0.119	0.542	0.466	0.545	0.455
IF4	0.042	0.414	0.294	0.412	0.291
IF5	0.050	0.498	0.359	0.497	0.357

Source: SmartPLS Output (2024).

Table 12 exhibited the results for the predictive relevance of the manifest variables. The Q^2predict values ranged from 0.042 to 0.119. Each of the values is greater than zero (0) hence, the indication that the exogenous variable (ES) has predictive relevance on the endogenous construct (IF).

The present study examined the effect of employees' shareholding on the EG in auditing, focusing on Nigerian quoted firms. In this study, the EG was measured via external auditors' independence factor. The results as shown in Table 9 above revealed that employees' shareholding has a significant positive effect on external auditors' independence factor in Nigerian quoted firms. This means that quoted firms that create

room for employees' shareholdings can uphold the independence of external auditors, especially in ensuring that external auditors carry out their statutory duty without bias and undue influence from those saddled with governance responsibilities. Thus, the upholding external auditors' independence factor would in turn reduce the EG in auditing.

In terms of the literature reviewed, findings from this study aligned with the postulation of the theory of inspired confidence. That is, the study aligned with the fact that stakeholders' confidence in the audit procedure of the Nigerian corporate entities can be improved when the independence of external auditors is upheld via employees' participation in the ownership of those entities. More so, the finding is supported by the works of Kozłowski (2014); Maghraoui and Zidai (2016); and Cheng and Ji (2021) who found a positive connection between employees' shareholding and firms' performance in Chinese-listed firms. Similarly, Abdelhamid (2022) conducted a study from which it was also reported that the participation of employees on the board of corporate entities has a significant positive influence on corporate governance in French-listed companies.

5. CONCLUSION AND RECOMMENDATIONS

The study, therefore, concluded that the participation of employees in the ownership of corporate entities where they work is a good internal corporate governance practice that can be employed by corporate entities in addressing the problem of the EG in auditing especially, in the Nigerian quoted firms. According to this study, firms that put in place good internal corporate governance practices especially, employees' shareholdings, are capable of enhancing the independence of their external auditors.

Thus, the upholding of external auditors' independence factor via employees' participation would in turn reduce the EG. Finally, the study recommended based on its findings that Nigerian quoted firms should put in place such a policy that encourages employees' participation in the ownership of the firms where they work. This would help to uphold the independence of external auditors; boost stakeholders' confidence and in turn narrow the EG in corporate entities.

Furthermore, this study is limited to one of the approaches for narrowing the AEG. That is the constructive approach. Also, the study has considered the effect of one of the internal corporate governance mechanisms in narrowing the EG. That is employees' shareholding. Lastly, the study has used only the primary source of data. Therefore, future researches are encouraged in the aspect of narrowing the AEG via the defensive approach as well as the consideration of other corporate governance mechanisms (internal or external) to further supplement the literature. However, the study has contributed to the existing literature on the EG in auditing conceptually by examining the influence of employees' shareholding on the EG; methodologically by testing the nexus between employees' shareholding and the AEG via PLS-SEM; and theoretically by alluding its findings to the theory of inspired confidence.

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findings. **Odunsi, O.T.** worked on the theoretical review, data collection process, and conclusion. **Alao, A.A.**, **Fakayode, O.P., Odunsi, O.T.** proofread, revised, and finalised the whole paper.

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Rifqi Khairul ANAM[1]

STUDY OF THE INFLUENCE OF CAPITAL AND INTELLECTUAL CAPITAL ON EMPLOYEE PERFORMANCE USING STRUCTURAL EQUATION MODELING

Social capital may boost economic development in companies that assume continuity. Trust, norms, and networks boost sector social capital. This study examines how social and intellectual capital affect employee performance at PT. Generation of Java-Bali Generating Unit Paiton-Probolinggo. A survey approach guided by the field's present state and participant interviews collected the research data. The research combined qualitative and quantitative methodologies. The Amos 29 software package was used to analyze questionnaire results using structural equation modeling. The research found a substantial link between social and intellectual capital and employee performance. Estimating social capital's effect on employee performance using 1.168. The correlation between intellectual capital and employee performance is 0.297, indicating a similar occurrence. Third hypothesis test showed intellectual capital's effect on employee performance was positive (0.059). At a significance level of 0.5 (5%), the computed critical value (CR) of 1.688 surpasses the barrier of ± 2.00.

Keywords: social capital, intellectual capital, employee performance, structural equation modelling.

1. INTRODUCTION

Capital is one of the metrics used to evaluate accomplishment in the realm of business and economics. It is possible to assert that each company is perpetually engaged in a competition to accumulate and accumulate the greatest amount of wealth, regardless of its quality or quantity. In a conceptual sense, a company's capital can be divided into two major categories: physical capital, which is tangible and quantifiable, such as physical infrastructure, property, and factories, and intangible or non-physical wealth, which includes the quality of human resources, education, work ethic, and good name (Cantrell et al., 2006).

In the pre-industrial and industrial economic periods, capital was classified as tangible or corporeal, which is a critical factor for companies. In the information age, the prosperity

[1] Rifqi Khairul Anam, Institute Ahmad Dahlan Probolinggo, Indonesia; e-mail: rifqistaimpro@iad.ac.id. ORCID: 0000-0003-4475-3242.

of a company is no longer contingent upon its physical assets. Now, the primary determinants of a company's success are intangible assets, specifically intellectual capital and social capital. The highest position is held by social capital, which is beneficial in motivating companies to exhibit behavioral norms, values, and beliefs as a significant method of enhancing employee performance (Teece, 2000).

Intellectual capital is defined as knowledge; however, not all knowledge is intellectual capital. Intellectual capital has the capacity to contribute something or provide a contribution that can provide added value and various applications for the company. Social capital is crucial for the success of the production process, as it enables the formation of close-knit groups, which in turn reduces the diversity of formal coordination mechanisms, including contracts, hierarchies, constitutions, and legal systems (Edvinsson & Sullivan, 1996).

PT. Generation of Java-Bali Generating Unit Paiton-Probolinggo has intellectual capital, including a highly skilled workforce capable of performing a wide range of manufacturing operations using advanced technology. Furthermore, the organization implements an On The Job Training program that facilitates the transfer of information from experienced individuals to potential new members, resulting in the generation of intellectual capital turnover inside the company.

Social capital plays a crucial role in the effectiveness of the production process by facilitating the formation of tightly-knit groups. This, in turn, reduces the need for formal coordination mechanisms such as contracts, hierarchies, constitutions, legal systems, and so on. Conversely, informal norms significantly decrease transaction costs, which are the expenses associated with monitoring, contracting, decision-making, and executing formal agreements, according to economists (Landry et al., 2002).

The social capital of PT. Generation of Java-Bali Generating Unit Paiton-Probolinggo is primarily trust in the reality of the company. This trust is demonstrated by the existence of a positive attitude toward other employees, which facilitates the dissemination of information. With trust, each employee feels confident in contributing ideas and concepts without fear of their ideas being hijacked by other employees.

PT. Java-Bali Generating Unit Generation Paiton-Probolinggo is managed based on the principle of structural organization, but family elements are more prominent. Despite the existence of formal rules, the company prioritizes social relations over hierarchical work relations. The social capital that the company possesses in the form of relations such as cooperation and togetherness is a resource that is continuously nurtured and developed to further the company's interests.

The objective of this study is to evaluate the extent to which employee performance at PT. Generation of Java-Bali Generating Unit Paiton-Probolinggo is influenced by social capital and intellectual capital, in accordance with the aforementioned empirical tendencies. This investigation is crucial because it will establish concrete measures for enhancing employee performance within the company by fortifying intellectual and social capital.

2. LITERATURE REVIEW AND THEORETICAL BASIS

2.1. Literature Review

This study is grounded on the thesis research conducted by Danang Cahya Permadi, which focuses on analyzing the impact of social capital and intellectual capital inside company on achieving organizational excellence. Utilizing the structural equation

modeling technique, the variable of intellectual capital incorporates the identification from Danang's study, which refers to the knowledge and skills owned by a social collective, such as an organization, intellectual community, or professional practice. Intellectual capital refers to valuable assets and the capacity to make informed decisions and take action based on knowledge (Permadi, 2010).

Identification of intellectual capital variables with the following indicators: Mastery of Technology, Ability to Learn and Innovate (Bakhsha et al., 2018). The Social Capital variable, which is derived from social capital, encompasses trust, norms, and social networks as fundamental components according to Coleman's perspective (Bhandari, Yasunobu, 2009).

2.2. Theoretical Basis: Integrated Paradigm Theory (George Ritzer)

Social capital is primarily constructed through three levels: micro, meso, and macro. At the micro level, interpersonal relationships form a bilateral network characterized by trust and mutually beneficial patterns of interaction between two individuals. However, if one person acts opportunistically and the other feels disadvantaged, this may lead to the dissolution of the relationship (Claridge, 2020).

Social institutions at the meso level need networks, trust, reciprocity, and norms to foster the social capital embedded within them. Institutional interaction occurs when the vision and aims of one institution align with those of other organizations. At the macro level, social capital serves as a binding force between individuals and social institutions, fostering unity, solidarity, tolerance, collaboration, and empathy. These qualities are inherent in society and crucial for its functioning (Membiela-Pollán, Pena-López, 2017).

Social capital in a company refers to the intangible but influential aspects of social interactions and relationships. The author categorizes social capital into micro-objective reality, which includes small-scale patterns of action and interaction that impact the system, and macro-subjective reality, which encompasses larger non-material phenomena like norms and values. Although social capital cannot be quantified, it has a tangible effect on the overall system (Streeten, 2002).

The link between two facts gives rise to a novel synthesis in the form of social capital. In his work on the Sociology of Science, Ritzer proposes a Dual Paradigm that emphasizes the importance of integrating micro-macro relations into a simplified analytical framework. This framework revolves around the concept of “levels of social reality”. However, it is crucial to note that these levels are not inherent in social reality itself, but rather a conceptual framework constructed by sociologists to understand and interpret the complexities of social phenomena. These two main social continuums, namely macroscopic-microscopic and objective-subjective, are interrelated in order to achieve a certain purpose (Sztompka, 2015).

The concept of macroscopic-microscopic dimension refers to the scale of social phenomena, ranging from the overall functioning of society to individual social actions. The subjective-objective continuum pertains to the debate around the existence of social phenomena. It questions whether these phenomena are tangible entities, such as bureaucracy and patterns of social interaction, or whether they exist only in the domain of ideas and knowledge, such as rules and values (Ritzer, 1985).

	MACROSCOPIC	
OBJECTIVE	I. Macro-objective Examples include: society, law, bureaucracy, technology, language	II. Macro-subjective Examples include: culture, norms, and values
SUBJECTIVE	III. Micro-objective Includes: patterns of behavior, actions and social interactions	IV. Micro-subjective Includes: various social constructions of reality
	MICROSCOPIC	

Figure 1. Main Levels of Social Reality

Source: Modern Sociological Theory (Ritzer, 2011).

In point of fact, these levels of social reality are not portrayed in a tangible manner; rather, they blend into each other as if they were a part of a larger social continuum. The purpose of this is to generate false distinction in order to describe the social reality (Tedeschi, 2017).

Ritzer (1990) explores the implications of micro and macro phenomena in contemporary sociological theory, highlighting the presence of both objective and subjective phenomena. He identifies four primary levels of social analysis and emphasizes the interconnectedness of these levels via dialectical interactions. The macro-objective level encompasses significant material aspects such as society, bureaucracy, and technology on a huge scale. The macro-subjective level encompasses broad, intangible phenomena such as ideals and conventions. Micro-objectivity refers to objective units at a small scale, such as patterns of activity and interaction. Micro-subjectivity, on the other hand, refers to the small-scale mental processes that humans use to create social reality. Each of these four levels of analysis has significance, but the most crucial aspect lies in its dialectic.

The perception of social reality is shaped by the prevailing paradigm and its corresponding scope. The social fact paradigm is a valuable framework for examining social phenomena at a specific level. The social fact paradigm is a valuable framework for examining social phenomena at both the macro-objective and macro-subjective levels (Ritzer, Bell, 1981). The social interpretation paradigm is suitable for examining social reality at the micro-objective and micro-subjective levels. If the proponents of each paradigm refrain from assuming that their method can comprehensively explain all aspects of social reality, then their paradigm will have significant relevance in the advancement of sociology (Ritzer, 1981).

Rizer underlined that the fundamental aspect of the integrated paradigm is on the interconnection among the four levels of social reality, specifically: (1) Macro-objective, such as legal standards, language, and bureaucracy. (2) Macro-subjective factors, such as norms, values, and culture, are taken into account. (3) Micro-objective refers to specific aspects of social interaction, such as conflict, collaboration, and trade. (4) For instance, the cognitive process of reasoning and the collective formation of societal perceptions. Crucially, the integrated method must include all current layers of reality in a comprehensive way (Ritzer, 1975).

This study focuses on analyzing the macro-subjective and micro-objective aspects. The macro-subjective level refers to non-material phenomena like norms and values that have

a broad impact on the entire system. On the other hand, the micro-objective level involves small-scale objective units such as patterns of action and interaction that also influence the system (Turner, 2012).

This social phenomena is also connected to the work system of PT. Generation of Java-Bali Generating Unit Paiton-Probolinggo. In this micro-level context, interactions among workers, such as conflicts, cooperation, and social exchanges, have an impact on the work system. The work system at this firm is influenced not only by individual-level realities, but also by macro-subjective factors such as norms and corporate culture. Hence, the use of this micro-macro paradigm is very appropriate for analyzing the work phenomena inside the company.

3. RESEARCH METHODS

3.1. Research Approaches and Types

The research methodology used is quantitative, which entails studying tangible phenomena that can be quantified and seeking to comprehend them via numerical measures. Quantitative research of this kind involves the testing of preexisting hypotheses by scholars. This study used a confirmatory design. The confirmatory pattern is designed to validate a model that is constructed based on a certain hypothesis. The study methodology used is causal research, which aims to determine the potential existence of a causal link by monitoring the present effects and investigating the potential causes based on the gathered data (Hurley et al., 1997).

3.2. Research Location and Research Period

The location of the research was PT. Generation of Java-Bali Generating Unit Paiton-Probolinggo in January 2024. The researcher chose the location because PT. Generation of Java-Bali Generating Unit Paiton-Probolinggo is one of the largest steam power generation units in Indonesia. This unit possesses the necessary qualifications to become a world-class company, which is further bolstered by the company's vision to become a Steam Power Generator with world-class standards.

3.3. Population and Sample

The research focused on a population of 150 employees from PT. Generation of Java-Bali Generating Unit Paiton-Probolinggo. The Krejcie table is used to determine the sample size by measuring the number of samples utilized (Rahman, 2023). The research included a population of 150 workers. Using the Krejcie table, it was determined that a sample size of 108 responses was appropriate, considering a 5% margin of error.

3.4. Data collection technique

In this situation, the author employs a questionnaire as a means of data collection, based on the aforementioned study strategy and type. The questionnaire used is a closed-ended questionnaire. The subjects of scrutiny in this study questionnaire are employees.

3.5. Data Analysis Technique

The used analytical approach is structural equation modeling (SEM), which integrates factor analysis and correlation regression analysis. SEM is utilized to examine the interconnections between variables inside a model, including the connections between indicators and their constructs, as well as the links between different constructs (Marsh et

al., 2014). Structural Equation Modeling analysis using AMOS 29 application software. AMOS 29 was chosen because currently AMOS is an easy-to-use program.

3.6. Research Variables

In connection with the possibility of expanding problems and interpretations that have the potential to bias the research results, in order to avoid this in this research, the problems formulated above are limited by the following variables:Variabel bebas dalam penelitian ini adalah :

1. social capital with sub-variables including norms, trust, networks found in employees.
2. intellectual capital with sub-variables of technological mastery, learning ability and structural capital.
3. The dependent variable in this study is employee performance with indicators including:
   a. Efficiency.
      Productivity as an output/input ratio is a measure of the efficiency of resource use. Efficiency is a measure in comparing the use of planned input with the use of actual input. The definition of efficiency is oriented towards input.
   b. Effectiveness.

Effectiveness is a measure that provides an overview of how far the target can be achieved both in terms of quantity and time. The greater the percentage of targets achieved, the higher the level of effectiveness. This concept is oriented towards output. Increased effectiveness is not necessarily accompanied by increased efficiency and vice versa. The principle in productivity management is effective in achieving goals and efficient in using resources.

3.7. Conceptual Definition

Conceptual definition is a definition of what we need to analyze and provide a clearer understanding of the term title. Researchers will provide an explanation of the conceptual definition of the variables contained in the following definition:

1. Social capital

Social capital according to James S. Coleman (1988, p. 22) is social capital consisting of several aspects of social structure, and they facilitate certain actions of actors or people in the corporate structure. Like other forms of capital, social capital can be productive for achieving certain goals. Like physical capital and human capital, social capital is not functional for all activities but may be specific to certain activities. A particular form of social capital is valuable in facilitating certain actions and may be useless or even harmful in other activities.

2. Intellectual Capital

Intellectual Capital according to Nahapiet and Goshal refers to the abilities and knowledge possessed by a social collectivity, such as an organization, an intellectual community, or a professional practice. Corporate culture is a term to explain the uniqueness of a group of people embedded in each individual in it by expressing their behavior consistently and persisting from one generation to the next (Schneider, 1957).

3. Performance

Performance according to Sedarmayanti (2009) is work achievement, work implementation, work achievement, so it is said that performance is the output of a process. Comparison of output effectiveness (achievement of maximum work performance) with

input efficiency (labor) which includes quantity, quality within a certain time. Performance can be measured based on measurements from Sedarmayanti, as follows:

Performance Formula

Performance = f (Ability, Effort, Opportunity)

Source: Sedarmayanti Performance measurements.

This equation shows the main factors or variables that produce performance, they are inputs that when combined, will determine the results of individual and group efforts. Ability is a function of human knowledge and skills and technological capabilities. It provides an indication of the various possibilities of achievement. Effort is a function of needs, goals, expectations and rewards. The extent of human latent ability that can be realized depends on the level of motivation of individuals and/or groups to devote their physical and mental effort. But nothing will happen until the manager provides an opportunity for individual effort in a meaningful way. Thus it can be said that work performance is a number of outputs from outcomes produced by a particular group or organization, both in material and non-material forms.

Furthermore, each item will be viewed as X for the influence test with the total score of the item viewed as Y. Each value of each item with a total score will state the validity of the item. An instrument is said to be valid if it is able to measure what is desired and an instrument is said to be invalid if it cannot reveal data from the variables studied accurately. Based on Singarimbun (1989) to measure validity, the influence test formula is used as follows:

$$r_{xy} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{\left\{\sum X^2 - (\sum X)^2\right\}\left\{N\sum Y^2 - (\sum Y)^2\right\}}}$$

The prediction of validity of the question items is done by observing the coefficient price with the following decision criteria:

I. The instrument item is said to be valid if the validity coefficient is followed by a probability value (p) less than 0.05 ($p<0.05$). This means that the item has accurate and convincing validity qualifications.

II. The instrument item is said to be invalid (failed) if the validity coefficient is followed by a probability (p) greater than or equal to 0.05 ($p>0.05$). This means that the item has less convincing validity qualifications.

The decision criteria are based on a 95% confidence level or a 5% significance level. By having tested the question items with a validity test, the items that are declared valid are sufficient to be used to collect research data.

3.8. Operational Definition

Operational definition is the meaning of the concept of the variable term used in the study so that it will be easy to measure on a measurement scale. The variables used in this study consist of independent variables and dependent variables, where variable X represents the level of social capital and intellectual capital while variable Y represents the

level of employee performance as a dependent variable. Operational definitions in this study include:

Table 1. Research Variables

Variables (Latent Variables)	Sub Variables (Manifest Variables)	Indicator
Social Capital	Trust	Trust Score For Generating Ideas
		Trust Score Involves Employees in Policy Making
		Trust Score Building Cooperation
	Norms in employment relations	Work Privacy Respect Score
		Sense of Togetherness Score Among Employees
		Score for Maintaining Personal and Workplace Hygiene
	Network	Good Relationship Score with Coworkers
		Employee Information Exchange Score
		Help Each Other If There Is A Problem Score
Intellectual Capital	Mastery of Technology	Technology Mastery Score
		Practical Skills Competency Score
		Competency Scores Increase Job Security
	Ability to Learn and Innovate	Achievement Competency Score
		Initiative Competency Score
		Spirit and Ability to Learn and Innovate Score
	Structural Capital	Harmonious Senior and Junior Relationship Score
		Information Mastery Competency Score
		Information Access Ability Score
Performance	Work Effectiveness	On-time work target completion score
		Work Result Quality Score
		Work Output Quantity Score
	Work Efficiency	Skor Efisiensi Dalam Melaksanakan Tugas
		Resource usage efficiency score
		Information dissemination score
	Work Behavior	Work Discipline Score
		Initiative Score in Solving Problems
		Accuracy Score in Work

Source: Interpretation from many sources, 2024.

4.RESULTS AND DISCUSSION

4.1. Structural Equation Modeling Analysis Results

4.1.1. Confirmatory Factor Analysis

Testing and development of the measurement model for each latent variable or latent construct indicator is carried out together to determine whether the observed variables are strong enough to reflect a dimension of a factor (Cohen et al., 1990). The confirmed variables are:

1. Social Capital Variable
2. Intellectual Capital Variable
3. Employee Performance Variable

4.1.1.1. Confirmatory Factor Analysis of Social Capital – Intellectual Capital – Employee Performance

Confirmatory analysis is crucial in determining whether each variable can adequately account for a factor's dimension (Hancock et al., 2018). A confirmatory factor analysis was performed to examine the relationship between social capital, intellectual capital, and employee performance. The findings of this analysis, which are shown in the table below, provide insights into the factors of social capital, intellectual capital, and employee performance.

Table 2. Confirmatory Factor Analysis

			Estimate	S.E.	C.R.	P	Label
Intellectual Capital	<---	Social Capital	.012	.206	.059	.953	
Employee performance	<---	Social Capital	.898	.532	1.688	.091	
Employee performance	<---	Intellectual Capital	.063	.211	.297	.766	
x3 (network)	<---	Social Capital	1.000				
x2 (norm)	<---	Social Capital	1.519	.555	2.736	.006	
x1(trust)	<---	Social Capital	3.607	1.529	2.359	.018	
y1 (mastery of technology)	<---	Intellectual Capital	1.000				
y2 (learning ability)	<---	Intellectual Capital	2.374	1.166	2.036	.042	
y3 (structural capital)	<---	Intellectual Capital	1.201	.364	3.304	***	
z3 (work effectiveness)	<---	Employee performance	1.000				
z2 (work efficiency)	<---	Employee performance	1.303	.231	5.648	***	
z1 (work behavior)	<---	Employee performance	.609	.125	4.870	***	

Source: Processed Primary Data, 2024.

The abbreviations and symbols in the “Confirmatory Factor Analysis” above are commonly used in statistical analysis, particularly in the context of structural equation modeling. Here's a breakdown of their meanings:

RT: This abbreviation likely stands for “Reliability Test”. In the context of factor analysis, reliability tests assess the consistency and stability of the measurement instrument. It helps to determine whether the instrument is measuring the same construct consistently across different administrations or samples.

S.E.: This stands for “Standard Error”. In statistics, the standard error is a measure of the variability of an estimate. It quantifies how much the estimate might vary if the study were repeated with different samples. A smaller standard error indicates a more precise estimate.

C.R.: This abbreviation represents “Critical Ratio”. The critical ratio is a statistical test used to determine whether a parameter estimate is significantly different from zero. It is calculated by dividing the parameter estimate by its standard error. If the critical ratio is greater than the critical value associated with a desired level of significance, the parameter estimate is considered statistically significant.

P: This stands for “P-value“. The p-value is the probability of observing a result as extreme or more extreme than the one obtained, assuming the null hypothesis is true. A lower p-value indicates a stronger evidence against the null hypothesis. In factor analysis, the p-value is often used to assess the statistical significance of the factor loadings.

Label: This refers to the name or label given to a specific variable or construct in the analysis. In factor analysis, the labels are used to interpret the meaning of the factors extracted from the data. They provide a conceptual understanding of the underlying latent variables.

The numbers in the estimate column represent the loading factor of each indicator on the construct and the interrelationship between related constructs. Since the social capital construct consists of three variables, there are three loading factors. The values (3.607), (1.519), (1.000) demonstrate a robust correlation between the markers of trust, norms in work interactions, and networks in the social capital construct. Social capital is derived from the establishment of trust, adherence to rules, and the development of extensive networks among workers.

From the perspective of intellectual capital, the obtained values were (1,000), (2,374), (1,201), indicating a significant correlation between the indicators of technical expertise, learning capacity, and structural capital in respect to the intellectual capital construct. Intellectual capital is derived from the acquisition of technical expertise, aptitude for learning, and the accumulation of structural capital.

The final component, employee performance, encompasses metrics for work effectiveness, work efficiency, and work behavior. It is assigned numerical values of (1.000), (1.303), and (0.606), respectively, indicating a significant correlation between these indicators and the employee performance construct.

The Maximum Likelihood method was used to estimate the parameters of the model, and the results of this estimation are presented. The coefficient estimate with the greatest value makes the most significant contribution. These findings indicate that the Social Capital variable, with a value of 0.898, has the greatest impact on Employee Performance. The trust indicator (X1) has the greatest impact on Social Capital, while the Learning Ability indicator (Y2) has the greatest impact on Intellectual Capital. Additionally, Work Efficiency is the indicator that has the greatest impact on Employee Performance.

After finding the confirmatory factor value of each construct, the relationship between constructs can be sought as follows:

a. The estimate value (0.898) in the social capital → Employee performance column has a loading factor of ≥ 0.50, indicating a strong link between the social capital

construct and employee performance. The connection is positive since the number (0.898) does not have a negative sign ("-"). Therefore, there is a positive correlation between the amount of social capital possessed by workers and their level of performance. In other words, as the value of social capital increases, employee performance also increases.

b. The estimate value (0.012) in the social capital → Intellectual Capital column represents a loading factor of < 0.50, indicating a poor link between the social capital and intellectual capital components. Conversely, the connection is positive as shown by the absence of a negative sign ("-") in the number (0.012). Therefore, there is a positive correlation between the two; as the amount of social capital possessed by employees increases, so does the level of intellectual capital formed among them.
c. The estimate value of 0.063 in the intellectual capital → Employee performance column has a loading factor of < 0.50, indicating a poor link between the intellectual capital construct and employee performance. The connection is positive since the number (0.063) does not have a negative sign ("-"). Therefore, there is a positive correlation between the amount of intellectual capital possessed by workers and their level of performance.

4.2. Overall Fit Model Testing with Structural Equation Modeling

Once the model has been examined using confirmatory factor analysis, each indicator in the well-fitting model may be used to describe the underlying construct. This enables the comprehensive examination of the whole model in Structural Equation Modeling. The findings of the Structural Equation Modeling study conducted using AMOS 29 are shown in the accompanying diagram:

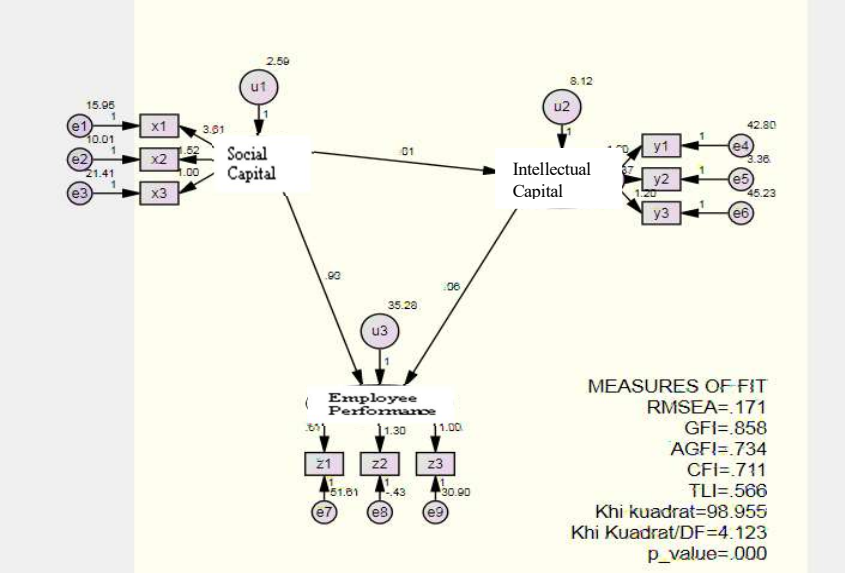

Figure 2. Structural Equation Modeling of Social Capital, Intellectual Capital, Employee Performance

Source: Processed Primary Data, 2024.

Image explanation from data processing with AMOS 29:

- Social Capital Construct with indicators
  X1: Trust
  X2: Norm
  X3: Network
- Intellectual Capital Construct with indicators
  Y1: Mastery of Technology
  Y2: Learning Ability
  Y3: Structural Capital
- Employee Performance Construct with indicators
  X1: Work Effectiveness
  X2: Work Efficiency
  X3: Work Behavior

The analysis results are compared to the requirements specified in the cut of value to determine the overall model evaluation. The model evaluation indicates that the data used in the study is consistent with the model, as the level of significance (P) for chi-square, GF Index, AGFI, TLI, CMIN/DF, and RMSEA is within the expected value range. For further details, please refer to the accompanying table.

Table 3. Results of the Feasibility Test of the Full Structural Equation Modeling

Criteria	Cut Of Value	Results	Model Evaluation
Chi-Square	Small; $\chi 2$ with df : 50; p : 5% = 67,5	**98.955**	**Good**
Probability	≥ 0,05	**0.093**	**Good**
GFI	≥ 0,90	**0.958**	**Good**
AGFI	≥ 0,90	**0.934**	**Good**
TLI	≥ 0,95	**0.966**	**Good**
CFI	≥ 0,95	**0.911**	**Good**
CMIN/DF	≤2,00	**1.123**	**Good**
RMSEA	≤0,08	**0.071**	**Good**

Source: Processed Primary Data, 2024.

Based on these results, it can be concluded that the developed model has met the requirements for model feasibility testing, which can be interpreted as meaning that the model is appropriate.

4.3. Hypothesis Test

The hypothesis proposed in this study will be analyzed based on the results of calculations conducted through confirmatory factor analysis and structural equation modeling.

Table 4. Hypothesis Testing

Hipotesis	Path	Value t (CR)
1	Social Capital (X1) → Employee performance (Y)	1.688
2	Intellectual Capital (X2) → Employee performance (Y)	0.297
3	Social Capital (X1) → Intellectual Capital (X2)	0.059

Source: Processed Primary Data, 2024.

4.3.1. The Influence of Social Capital on Employee Performance

The findings of this hypothesis test indicate a strong and statistically significant relationship between social capital and employee performance, with social capital having a favorable impact on performance. The estimated parameter between social capital and employee performance is 1.168, indicating a significant relationship in the test model. The value of C.R is 1.688, which exceeds the threshold of ± 2.00 at a significance level of 0.5 (5%). This study provides empirical evidence that there is a favorable correlation between Social Capital and Employee Performance.

Social capital has a significant influence in enhancing employee performance. This phenomenon occurs due to the structural, relational, and cognitive abilities of organizations, which allow them to anticipate both internal and external changes. Social capital facilitates the development of social connections via communication networks, which in turn accelerates the exchange and integration of collective knowledge among human resources inside the firm. Social capital has a significant role in enhancing work effectiveness, work efficiency, and employee work behavior, which in turn facilitates the transformation of learning organizations. This, undoubtedly, has a beneficial influence on the growth of employee performance.

4.3.2. The Influence of Intellectual Capital on Employee Performance

The findings of this hypothesis test indicate a significant positive correlation between intellectual capital and employee performance. The estimated parameter linking intellectual capital and employee performance is 0.297, indicating a positive relationship in the test model. The parameter has a critical ratio (C.R) value of 0.297, which above the threshold of ± 2.00 at a significance level of 0.5 (5%).

The company's intellectual capital significantly influences the development of high employee performance. This phenomenon occurs due to the organization's capacity to acquire, generate, embrace, and disseminate knowledge. Conversely, employees possessing strong intellectual capital will exhibit greater innovation in product development. This innovation proves invaluable in the advancement of knowledge research, resulting in the creation of a knowledge database. This serves as a proactive measure to anticipate potential socio-cultural shifts, enabling the company to adapt and evolve as a learning organization. Therefore, the company is capable of preserving and incorporating advantages that make it challenging for other businesses to rival.

4.3.3 The Influence of Social Capital on Intellectual Capital

The findings of this hypothesis test indicate a significant positive correlation between intellectual capital and employee performance. The estimated parameter linking intellectual capital and employee performance is 0.059, indicating a positive relationship

in the test model. The value of the critical ratio (C.R) is 0.297, which exceeds the threshold of ± 2.00 at a significance level of 0.5 (5%).

The relationship between social capital and positive intellectual capital demonstrates that trust, norms, and networks among employees align with technological mastery and structural capital, particularly learning ability, to significantly contribute to the development of intellectual capital.

The results acquired indicate that all hypotheses can be verified. The theoretical model has been subjected to the goodness of fit criteria and has yielded favorable results, as illustrated in the subsequent table.

Table 5. Hypothesis Conclusion

Hypothesis	Test results
Hypothesis 1: Social Capital Has a Positive and Significant Influence on Employee Performance	Proven
Hypothesis 2: Intellectual Capital Has a Positive and Significant Influence on Employee Performance	Proven
Hypothesis 3: Social Capital Has a Positive and Significant Influence on Intellectual Capital	Proven

Source: Processed Primary Data, 2024.

5. CONCLUSION AND SUGGESTION

From the results of data analysis and theoretical discussions, the following conclusions can be drawn:

1. The findings of this hypothesis test indicate a strong and statistically significant relationship between social capital and employee performance. The calculated coefficient between social capital and employee performance is 1.168. The predicted parameter between intellectual capital and employee performance is similarly observed to be 0.297. The estimated parameter between intellectual capital and employee performance is 0.059, indicating a positive result from the third hypothesis test. The value of the critical ratio (C.R) is 1.688, which is more than or equal to ± 2.00 at a significance level of 0.5 (5%).
2. Based on the Structural Equation Modeling analysis, relationships were found between constructs, including:
   a. The value of 0.898 in the estimates column has a loading factor > 0.50, indicating a strong correlation between the concept of social capital and employee performance. The connection is positive since the value 0.898 does not have a negative sign ("-"). Therefore, there is a positive correlation between the amount of social capital possessed by workers and their level of performance. In other words, as the value of social capital increases, so does employee performance.
   b. The value of 0.012 in the estimates column has a loading factor of > 0.50, indicating a weak link between the constructs of social capital and intellectual capital. Conversely, the connection is positive as shown by the absence of a negative sign ("-") in the number 0.012. Therefore, there is a positive correlation between the two; as the amount of social capital possessed by workers increases, so does the level of intellectual capital established among them.

c. The loading factor value of ≥ 0.50 is indicated by the number 0.063 in the estimates column, which suggests a loose relationship between employee performance and the intellectual capital construct. The relationship is positive in nature, as the number 0.063 does not contain a negative sign ("-"). Consequently, the relationship between the two is symmetrical; the performance of employees is directly proportional to the value of their intellectual capital.

5.1. Suggestion

Future researchers investigating social capital and intellectual capital, particularly in the context of industry, may consider incorporating relational capital subvariables into the existing intellectual capital variables. These subvariables would complement the already studied aspects of technological mastery, learning ability, and structural capital.

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Ilyes CHARCHAFA[1]
Bilal KIMOUCHE[2]

FACTORS SHAPING CORPORATE SOCIAL DISCLOSURE PRACTICES: EVIDENCE FROM THE SAUDI ARABIAN CONTEXT

This research investigates factors influencing corporate social disclosure (CSD) within the context of Saudi Arabia. Specifically, it examines how corporate governance attributes and company characteristics impact the extent of CSD. The study utilizes data from 435 firm-year observations spanning 87 companies listed on Saudi Exchange (Tadawul) during 2015-2019. CSD levels are gauged using an unweighted disclosure index derived from the Global Reporting Initiative (GRI) framework.
The results reveal a negative effect of board size on CSD, suggesting that smaller boards may encourage more comprehensive disclosures. Conversely, the effects of board independence and audit committee independence are insignificant. In line with theoretical predictions, larger, profitable, manufacturing companies, as well as those involved in international operations, tend to disclose more social information. The current research contributes to the literature, addressing conflicting findings on the effects of board characteristics and profitability, and exploring the underexplored roles of audit committee independence and internationalization.

Keywords: corporate social disclosure, corporate governance, company characteristics.

1. INTRODUCTION

In recent decades, the topic of corporate social disclosure (CSD) has garnered significant research interest as a means by which organizations convey environmental effects and social influence to stakeholders (Gray et al., 1987; Mathews, 1993). Through the voluntary dissemination of qualitative and quantitative information pertaining to their non-financial performance, companies exemplify a sense of accountability extending beyond conventional financial reporting (Gray et al., 1987). The increasing global emphasis on sustainable development and corporate transparency has prompted companies to prioritize CSD as a strategic imperative (Deegan, 2002; Khan et al., 2009).

[1] Ilyes Charchafa, Setif 1 University, Algeria; e-mail: Lcharchafa@univ-setif.dz. ORCID: 0000--0001-7585-7146.
[2] Bilal Kimouche, University 20 Août 1955-Skikda, Algeria; e-mail: b.kimouche@univ-skikda.dz. (corresponding author). ORCID: 0000-0003-2609-7149.

The Kingdom of Saudi Arabia has pursued regulatory reforms through the Capital Market Authority and Saudi Stock Exchange, evidencing intent to promote sustainability. The CMA's Corporate Governance Code (2023) and the Saudi Stock Exchange ESG Disclosure Guidelines (2021) denote the nation's commitment to enhancing transparency and aligning with global sustainability standards. However, prior empirical evidence suggests that CSD in Saudi Arabia remains nascent, lagging behind benchmarks in developed countries (Alazzani et al., 2019).

Literature have extensively examined CSD determinants across different contexts, relating disclosure to company characteristics and governance mechanisms (Branco and Rodrigues, 2008; Reverte, 2009; Gamerschlag et al., 2011). However, the results are inconclusive, with relationships often showing mixed or conflicting results. Additionally, research on CSD drivers in Saudi Arabia is limited (Macarulla and Talalweh, 2012; Razak, 2015; Abdulhaq and Muhamed, 2015; Alotaibi and Hussainey, 2016).

To address such gaps, this study investigated the influence of specific attributes within corporate governance (board size, board independence, audit committee independence) and company characteristics (size, profitability, internationalization) on the CSD practices of listed Saudi companies. Based on an analysis of 435 firm-year data points collected between 2015 and 2019, this paper aims to advance understanding of CSD determinants as the Saudi market evolves. Novel contributions include considering previously under-researched effects of internationalization and audit independence, as well as reconciling mixed findings related to board attributes and company financial performance. However, the study is limited by its reliance exclusively on information from annual reports for CSD data, coupled with the utilization of an unweighted disclosure index.

Following this introduction, the paper proceeds as follows: Section 2 outlines the literature review. Section 3 develops the research hypotheses. Section 4 elaborates on the research methodology, covering data collection, variable measurement, and analytical approach. Section 5 presents the empirical findings and reviews the results and their implications. Finally, Section 6 offers a conclusion, acknowledges limitations, and suggests recommendations for further research.

2. LITERATURE REVIEW

Corporate social disclosure (CSD) refers to the voluntary communication by organizations of their social and environmental activities and their impacts to stakeholders and society (Mathews, 1993). It extends corporate accountability beyond traditional financial reporting, reflecting the acknowledgment that companies have wider obligations than simply producing profits for their shareholders (Gray et al., 1987).

While there is no unified definition as CSD is perceived differently and evolves over time and context (Ince, 1998; Giannarakis 2014). It commonly covers topics like environmental matters, fair business practices, community involvement, human resources, and other social matters, like energy conservation, pension data, disabled employment, etc. (Gray et al., 1995; Saaydah, 2005). Companies employ channels such as annual reports, websites, advertising, and public relations for CSD (Waller and Lanis, 2009). These practices offer potential benefits, including enhanced decision-making, operational efficiencies, risk reduction, improved reputation, and stakeholder engagement (Khan et al., 2009). It allows overcoming information asymmetries by presenting performance favorably through discretionary reporting (Merkl-Davies and Brennan, 2007). While

implementing corporate social responsibilities (CSR) incurs costs, sustainable CSR can attract investors and increase company value (Tjia and Setiawati, 2012).

Saudi government has initiated reforms to promote sustainable development and environmental stewardship through vision 2030. In 2017, the Capital Market Authority issued corporate governance guidelines (amended 2023), emphasizing social responsibility (Articles 87-88) to improve transparency and attract investment. In 2021, the Saudi Exchange published ESG Disclosure Guidelines on workforce policies, ethical procurement, labour rights, and tax transparency to raise ESG awareness and align with UN standards. In 2023, the GCC Exchanges Committee, led by Saudi Arabia, released 29 voluntary ESG indicators for listed GCC companies, covering emissions, energy/water usage, wage parity, workforce diversity, data privacy, and ethics. However, research suggests governance reforms may not directly improve ESG reporting (Chebbi and Ammer, 2022). Legal frameworks lag in driving sustainability goals (Abo Shareb, 2023). The voluntary nature of guidelines allows managerial discretion, potentially undermining transparency. Further reforms may strengthen ESG commitments and disclosures.

Since Ernst and Ernst's (1978) pioneering work, a growing body of research has aimed to measure CSD levels and identify influential factors, primarily in developed countries (Ho and Taylor, 2007; Branco and Rodrigues, 2008; Reverte, 2009; Tagesson et al., 2009; Gamerschlag et al., 2011; Aburaya, 2012; Kolk and Fortanier, 2013; Giannarakis, 2014; Dyduch and Krasodomska, 2017). Relatively fewer studies have explored CSD in developing countries (Saaydah, 2005; Haniffa and Cooke, 2005; Sukcharoensin, 2012; Wang et al., 2013; Grecco et al., 2013; Mousa et al., 2018; Aryassi et al., 2020).

These studies commonly employed content analysis using self-constructed disclosure indices (Haniffa, Cooke, 2005; Ho, Taylor, 2007; Branco, Rodrigues, 2008), existing indices (Grecco et al., 2013; Dyduch, Krasodomska, 2017), third-party sustainability ratings (Reverte, 2009; Giannarakis, 2014; Aryassi et al., 2020), or other approaches like sentence counting (Saaydah, 2005) or word counting (Gamerschlag et al., 2011). CSD drivers include financial characteristics, company characteristics, and corporate governance attributes, with multiple regression being the primary statistical method. While factors like profitability, size, industry, and board characteristics have been extensively studied, others like media exposure (Reverte, 2009), internationalization (Branco and Rodrigues, 2008), and reputation (Dyduch, Krasodomska, 2017) have received less attention. Nevertheless, the findings from these studies have yielded mixed results, with specific relationships remaining inconclusive (see section 3).

In Saudi Arabia context, eight studies were found to be relevant to the study topic, revealing relatively low levels overall (Macarulla, Talalweh, 2012; Razak, 2015; Abdulhaq, Muhamed, 2015; Alotaibi, Hussainey, 2016; Habbash, 2016; Issa, 2017; Ben Mahjoub, 2019; Boshnak, 2022). These studies explored the influence of various corporate governance attributes, firm characteristics, and other factors on CSD, with mixed findings reported.

This study has significant contributions to the literature on CSD practices. It aims to contribute to the ongoing discourse by investigating the impact of certain corporate governance attributes (board size, board independence, audit committee independence) and corporate characteristics (company size, company profitability, and internationalization) on CSD in the Saudi Arabia context, while controlling for company leverage, company age, and industry type. As far as we are aware, this is the first study, within the context of Saudi Arabia, to analyze the effects of audit committee independence and

internationalization on CSD, offering valuable insights into factors that shape such practices.

Existing literature has presented mixed findings regarding the correlation between corporate governance attributes, corporate characteristics, and CSD in Saudi Arabia. By examining these constructs alongside additional control variables and utilizing a broader sample size, this study endeavors to resolve inconsistencies in the existing literature and offer deeper empirical insights into CSD practices in the Saudi Arabian context.

Previous investigations into CSD within the Saudi context have been limited by relatively small sample sizes. For example, the largest study included 344 firm-year observations (Alotaibi, Hussainey, 2016). In contrast, the current study analyzes 440 firm-year observations spanning the years 2015 to 2019, allowing for more robust inferences and generalizability. Furthermore, by adopting the identical fourth-generation Global Reporting Initiative disclosure index utilized in earlier Saudi studies (Alotaibi, Hussainey, 2016; Issa, 2017; Boshnak, 2022), the present research complements and enhances comparability with prior works, thus improving the precision and comprehensiveness of analyzing CSD trends.

3. THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

Various theories (e.g. legitimacy, agency, signalling) seek to explain motivations for CSD. This study uses agency and legitimacy theories. It adopts a multi-theoretical lens for a holistic understanding of influencing factors among Saudi Arabian companies.

3.1. Agency theory

Agency theory provides a framework for understanding the relationship between owners (principals) and managers (agents) within firms (Jensen, Meckling, 1976). It addresses the principal-agent problem that arises between shareholders and managers. The fundamental issue is that the objectives of shareholders and management may not always be perfectly aligned. While shareholders seek to optimize the company's value for their own benefit as owners, management may be motivated by other factors such as compensation, job security, and reputation (Fama, Jensen, 1983). This misalignment of interests creates "agency costs" as shareholders must allocate resources to monitor management behavior and create incentives for managers to prioritize shareholders' welfare (Jensen, Meckling, 1976).

Increased transparency through voluntary disclosures like CSR reporting can help mitigate agency costs (Merkl-Davies and Brennan, 2007). By providing more information about their environmental, social, and governance policies and practices, managers can demonstrate to shareholders that they are responsible stewards focused on long-term value creation rather than short-term self-interest (Aburaya, 2012). Enhanced transparency holds management accountable and fosters trust with investors and the public.

Board size

According to agency theory, an increased number of board members can potentially enhance the board's capacity for oversight and monitoring of management. A larger board size is purported to introduce a more diverse array of expertise and better monitoring capabilities (Xie et al., 2003), which may facilitate improvements in the efficacy of the reporting system, thereby leading to greater transparency and disclosure practices (Aburaya, 2012). However, Jensen (1993) argues that a large board can diminish its

effectiveness and increase the potentiality for CEOs to exercise control and manipulate the board. Due to the dispersal of opinions and lack of cohesiveness in viewpoints, a too-large board may exhibit reduced monitoring capabilities (Cheng, Courtenay, 2006), therefore hindering its ability to ensure adequate disclosure (Rao, Lester, 2012). However, these difficulties can be mitigated by using subcommittees that can enhance coordination and communication among board members (Aburaya, 2012).

Previous studies such as Ho and Taylor (2007), Giannarakis (2014), and Mousa et al. (2018) found a positive relationship between board size and the extent of CSD, while Dyduch, Krasodomska (2017) and Aryassi et al. (2020) reported a non-significant relationship. In the context of Saudi Arabia, Alotaibi and Hussainey (2016) found a positive relationship between board size and the extent of CSD, whereas Issa (2017) reported no significant relationship. Based on the preponderance of previous studies, we propose the following hypothesis:

H1: There is a positive correlation between the level of CSD and board size.

Board independence

In line with the principles of agency theory, independent directors can play an oversight role curtailing potential opportunistic managerial behaviors (Haniffa, Cooke, 2002). Independent directors exhibit less susceptibility to management influence and are better positioned to strengthen monitoring effectiveness by encouraging transparent information dissemination (Cheng, Courtenay, 2006; Rao and Lester, 2012). Beyond independence, such directors may also demonstrate a stronger sense of social accountability (Aburaya, 2012). They are more inclined to prioritize corporate social and environmental responsibilities (Beniamin et al., 2008). This can lead to more informed managerial decision-making aligned with shareholder and stakeholder objectives (Rao, Lester, 2012), thereby increasing levels of corporate social disclosure (CSD) (Haniffa, Cooke, 2002; Aburaya, 2012).

Empirical evidence regarding the relationship between board independence and CSD has produced mixed results. Studies by Mousa et al. (2018) and Aryassi et al. (2020) found a positive correlation between board independence and CSD, while Aburaya (2012) identified a negative correlation. Within Saudi Arabia, Issa (2017) reported a negative relationship, whereas Alotaibi and Hussainey (2016) and Habbash (2016) found no significant association. Given the inconclusive nature of prior findings, the following hypothesis is proposed:

H2: There is a positive correlation between the level of CSD and board independence.

Audit committee independence

In the realm of overseeing corporate affairs, the audit committee represents a pivotal entity, facilitating communication among stakeholders, including internal and external auditors, to safeguard shareholder interests. This committee plays a crucial role in improving internal controls, overseeing financial reporting processes, and managing risks (Chau, Gray, 2010). One of the core factors impacting audit committee effectiveness relates to involvement from independent directors, which, from an agency theory viewpoint, introduces objectivity, mitigating information asymmetries, and enhancing impartial decision-making (Xie et al., 2003; Aburaya, 2012). Consequently, audit committees primarily composed of independent members foster credibility, transparency, and voluntary disclosures. This perspective finds support from prior empirical studies linking

independent audit committee members to elevated CSD levels (Cheng and Courtenay, 2006). Therefore, we propose the following hypothesis:

H3: There is a positive correlation between the level of CSD and Audit committee independence.

3.2. Legitimacy theory

The legitimacy theory proposes that organizations exist within the broader context of society and have an implicit social contract to operate in alignment with societal values, norms, and expectations (Cho, Patten, 2007). It argues that organizations must not merely function within the boundaries of societal norms and values but actively demonstrate that their actions and conduct are consistent with prevalent societal expectations (Deegan, 2002).

The concept of a "legitimacy gap" emerges when organizational actions and values diverge from overarching societal paradigms, representing a substantial threat by potentially diminishing demand, labor/resource provider loyalty, and increasing regulatory interventions via stakeholder lobbying (Deegan, 2002).

To preserve and enhance legitimacy, companies engage in disclosure pertaining to environmental and social initiatives (Branco, Rodrigues, 2008). Through sustainability reporting, corporations aim to signal adherence to societal requirements by conveying operational, accountability and impact transparency to stakeholders (Milne, Patten, 2002). This seeks to reconcile any discrepancy between corporate behaviour and societal concerns (Deegan, 2002). Voluntary CSD is a tool for companies to demonstrate fulfilling broader expectations, and thereby maintain legitimacy vital to sustain operations and social acceptance (Deegan, 2002).

Company size

Legitimacy theory suggests that a company's sustainability hinges on its acceptance by society (Deegan, 2002). Larger companies are viewed as significant economic entities given the social and environmental consequences of their operations (Hackston, Milne, 1996). As a result, these companies face increasing scrutiny from society and stakeholders (Sukcharoensin, 2012). larger companies to maintain a favorable reputation and enhance legitimacy, they are anticipated to convey more information concerning their social and environmental efforts and engagements (Hackston, Milne, 1996).

Numerous studies have identified a positive correlation between company size and the scope of CSD, with larger companies tending to provide more social responsibilities information (Macarulla, Talalweh, 2012; Alotaibi and Hussainey, 2016; Issa, 2017; etc.). However, the evidence is mixed. A study by Al-Tuwaijri et al. (2004) reported a negative correlation between corporate environmental disclosure and company size. Meanwhile, other research found an insignificant correlation, for instance, the research conducted by Mousa et al. (2018) and Aryassi et al. (2020). Despite mixed evidence, the consensus supports the hypothesis that:

H4: There is a positive correlation between the level of CSD and company size.

Company profitability

From a legitimacy theory perspective, Haniffa and Cooke (2002) suggest that profitable companies, as a means of justifying their continued operations tend to be more inclined to provide information on CDR to their audience compared to less profitable companies. Profitable ones face greater social demands and public scrutiny due to their resources and

flexibility. They can effectively communicate their CSR initiatives to engage stakeholders extensively, thus strengthening their legitimacy (Giannarakis, 2014; Haniffa, Cooke, 2002) and maintaining a favorable reputation (Boshnak, 2022). Failing to do so can raise the risk of being associated with actions that breach societal expectations (Gamerschlag et al., 2011).

Numerous studies have presented mixed findings on the association between CSD and profitability. The most researchers (Saaydah, 2005; Tagesson et al., 2009; Gamerschlag et al., 2011; Macarulla, Talalweh, 2012; Razak, 2015; Issa, 2017; Aryasri et al., 2020) identified a positive correlation, while Ho and Taylor (2007) found a negative association. Others, including Reverte (2009), Abdulhaq and Muhamed (2015), Alotaibi and Hussainey (2016), Habbash (2016), and Boshnak (2022), reported an insignificant correlation. Drawing from this diverse literature, we suggest the following hypothesis:

H5: There is a positive correlation between the levels of CSD and Company Profitability.

Internationalization

Internationalization, defined by Zahra and George (2002), as cited in Dyduch and Krasodomska (2017), as the strategic endeavour of innovatively identifying and capitalizing on opportunities beyond a company's domestic market to gain a competitive edge, presents a multifaceted landscape for companies. As companies expand their global footprint, they encounter diverse stakeholder expectations, regulatory frameworks, and institutional pressures across multiple markets (Branco, Rodrigues, 2008). Kolk and Fortanier (2013) argue that cross-border companies face stronger and more diverse threats to their legitimacy across different operational contexts. Issues or controversies in one location may spillover and tarnish their reputation in other regions.

This increased exposure and scrutiny from the international community compel companies to adopt more stringent social and environmental strategies and disclose more comprehensive information (Branco, Rodrigues, 2008; Kolk, Fortanier, 2013). The necessity for such measures arises from the need to forge positive reputations as corporate citizen in the perception of new host communities. Additionally, the evolving systems of global governance offer encouragement for increased CSR commitments (Chapple and Moon, 2005). Consequently, internationalization is expected to force companies to be more proactive in their CSR endeavours (Branco, Rodrigues, 2008), aligning with the global trend of pro-social responsibility initiatives (Chapple, Moon, 2005).

Dyduch and Krasodomska (2017) found a positive correlation between internationalization and CSD of Polish companies, while Kolk and Fortanier (2013) found a negative correlation in the Fortune Global 250. Moreover, Branco and Rodrigues (2008) reported no significant correlation between the two variables in Portuguese companies. Given this diverse empirical evidence, we propose the following hypothesis:

H6: There is a positive correlation between the level of CSD and Internationalization.

4. RESEARCH METHODOLOGY

4.1. Data and sample selection

The study drew the sample from publicly listed companies on the Saudi Stock Exchange (Tadawul) within the timeframe of 2015 to 2019. Out of the total 201 companies listed on Tadawul during this period, 116 companies were randomly selected. 12 companies categorized under financial and insurance sectors were excluded from the study.

Furthermore, 17 companies with missing data on the study variables were also omitted. Consequently, the final sample comprised 87 companies, representing 43.28% of the listed companies, operating in nine sectors according to the Tadawul industry classification, as shown in Table 1. The aim of the random selection process was to secure a sample of the population that is representative, without the application of any particular stratification criteria. Data collection was conducted from the annual reports of the sample companies spanning a five-year duration, yielding a total of 435 firm-year observations. These annual reports were acquired from both the companies' websites and the official repository of Tadawul, ensuring access to comprehensive and reliable data.

Table 1. Industry classification

Industry sector	N	%
Energy	2	2.29
Materials	26	29.88
Industrials	14	16.09
Consumer discretionary	16	18.39
Consumer staples	12	13.79
Health care	5	5.74
Telecommunication services	4	4.59
Utilities	2	2.29
Real estate	6	6.89
Total	87	100

Source: Authors.

4.2. Dependent variable measurement

To operationalize the evaluation of CSD within corporate annual reports, the study employed content analysis, a reliable method for assessing both the quantity and quality of disclosure (Branco, Rodrigues, 2008; Aburaya, 2012). This involved using an unweighted disclosure index based on a dichotomous approach, which was developed using the fourth-generation framework for sustainability reporting provided by the Global Reporting Initiative (GRI, 2013). This GRI framework has been widely used in previous CSD studies, including in Saudi Arabia (Gamerschlag et al., 2011; Issa, 2017; Alotaibi, Hussainey, 2016; Boshnak, 2022). Annual reports were manually reviewed based on the GRI's social and environmental dimensions checklist with 5 categories and 42 sub-categories. Items were scored 1 for presence and 0 for absence.

Through the adoption of the unweighted dichotomous approach, this study emphasizes the breadth of social disclosures rather than relative importance, depth, or length (Monteiro, Aibar-Guzman, 2010). Moreover, employing such an approach increases objectivity in determining item weights (Aburaya, 2012). The level of CSD, represented by the CSD Index (CSDI), was quantified using Equation (1):

$$\text{CSD index (CSDI)} \equiv \frac{\sum_{i=1}^{n} D_i}{M} \times 100 \tag{1}$$

In this equation, Di takes the value of 1 if disclosure item i is present and 0 if it is absent. M denotes the maximum attainable disclosure score, while n represents the total number of disclosed items.

4.3. Operationalization of predictor and control variables

The approach to quantifying the explanatory and control variables is elucidated in Table 2. Within the current study, corporate governance attributes (board size, board independence, and audit committee independence) and corporate characteristics (company size, company profitability, and internationalization) were examined as independent variables to assess their impact on CSD. Additionally, to mitigate the risk of model misspecification and account for confounding variables influencing CSD, certain corporate characteristics were included as control variables. Prior scholarly investigations have shown that company size, company leverage, and industry type may significantly influence CSD extent (e.g., Aburaya, 2012; Habbash, 2016; Boshnak, 2022; Aryassi et al., 2020). Measurement methods for these variables were adapted from prior studies (e.g., Branco, Rodrigues, 2008; Reverte, 2009; Tagesson et al., 2009; Giannarakis, 2014; Dyduch, Krasodomska, 2017).

Table 2. Independent and control variables measurement

Variable	Measure
Independent variables	
Board Size (Bsize)	Number of directors
Board Independence (Bind)	Proportion of independent directors
Audit Committee Independence (ACind)	Proportion of independent members on audit committee
Company Size (Fsize)	Natural logarithm of total assets
Company Profitability (Fprof)	return on assets (ROA)
Internationalization (Inter)	A binary variable captured firms' international presence, coded 1 if the company had foreign subsidiaries, exported products, or operated overseas markets, and 0 otherwise.
control variables	
Company Leverage (Flever)	Debt-to-equity ratio
Company age (Fage)	The duration since the company was founded, measured in years.
Industry Type (InType)	A binary variable captured firms' industry classification, coded 1 if the company operated in the chemicals, petrochemicals, engineering, or cement manufacturing sectors, and 0 otherwise.

Source: Authors.

4.4. Model specification

This study employs a multiple regression analysis approach to examine the determinants of CSD levels. The analysis is conducted using an ordinary least squares (OLS) estimation technique. The regression model incorporates both independent variables of interest and control variables to account for potential confounding factors that may influence CSD based on prior literature and theoretical considerations. The independent variables included in the model are board size (Bsize), the proportion of independent

directors on the board (Bind), audit committee independence (ACind), company size (Fsize), company profitability (Fprof), and internationalization (Intern). Additionally, the model controls for company leverage (Flever), company age (Fage), and industry type (InType) as these factors have been determined as potential drivers of CSD in prior research. The multiple regression equation can be formulated as follows:

$$\begin{aligned} CSDI = {} & \alpha_0 + \alpha_1(Bsize) + \alpha_2(Bind) + \alpha_3(ACind) + \alpha_4(Fsize) + \alpha_5(Fprof) + \\ & + \alpha_6(Intern) + \alpha_7(Flever) + \alpha_8(Fage) + \alpha_9(InType) + \varepsilon \end{aligned} \quad (2)$$

Where α_0 is an intercept; α_1, α_2, α_3, α_4, α_5, and α_6 are the parameters of the independent variables (Bsize, Bind, ACind, Fsize, Fprof, and Intern); α_7, α_8, α_9 are the parameters of the control variables (Flever, Fage, InType); ε denotes the residual error.

5. RESULTS

5.1. Descriptive statistics

Panel A shows that the mean value of the dependent variable, CSD score, is 0.352, indicating a low level of CSD among the sampled companies. The CSD scores range from a minimum of 0.120 to a maximum of 0.947, indicating variation in the extent of CSD among different companies. This finding is consistent with Abdulhaq and Muhamed (2015), who found that the Saudi CSD average level is 0.36, highlighting the persistence of low levels of CSD over time. The finding also aligns with the conclusions of Alazzani et al. (2019), who determined that environmental disclosures from companies in the GCC region, including Saudi Arabia, are still in their nascent stages and trail significantly behind the disclosures made by companies in developed nations. While some companies exhibit relatively low levels of CSD, others are actively engaged in disclosing social information, indicating potential areas for improvement. The findings highlight the necessity for Saudi companies to bolster their CSD and compliance with corporate governance requirements.

As for the independent variables, the average board size is nine members, ranging from five to fifteen members. On average, 53.2% of board members across the sample consist of independent directors, indicating that more than half of the board members are independent directors on average. However, the minimum value of 0.125 suggests that some companies have a lower level of board independence. The proportion of independent directors comprising audit committees shows a relatively higher mean value of 0.682, ranging from a minimum of 0.213 to a maximum of 1.000. This observation suggests that audit committees tend to exhibit a more pronounced degree of independence in their composition compared to the overarching boards of directors.

Company size, measured by the natural logarithm of total assets, has an average of 9.009, ranging from 5.223 to 12.326. Profitability, proxied by return on assets (ROA), has an average of 0.051. The minimum ROA is -0.351, while the maximum is 0.417, indicating a wide range of profitability levels among the sampled companies. Regarding the control variables, company leverage, measured by the debt-to-equity ratio, has a mean of 0.389, ranging from 0.014 to 0.915, suggesting varying capital structures among the companies. Finally, the company age has an average of 25.438 years, with the youngest company being 6 years old and the oldest company being 58 years old.

In Panel B, 62.06% of the sample companies are classified as manufacturing companies, while 37.93% belong to non-manufacturing sectors. Furthermore, the analysis reveals that 33.33% of the companies are characterized as internationalized, indicating their active involvement in cross-border operations and engagement with international markets.

Conversely, the majority, comprising 66.66% of the sample, are classified as non-internationalized entities, primarily operating within their respective domestic domains and markets.

Table 3. Descriptive statistics for data variables

Panel A – Dependent, Independent and Control Variables					
Variables	N	Mean	Std. Deviation	Min	Max
CSDI	435	0.352	0.168	0.120	0.947
Bsize	435	8.795	1.829	5	15
Bind	435	0.532	0.147	0.125	1
ACind	435	0.682	0.764	0.213	1
Fsize	435	9.009	1.148	5.223	12.326
Fprof	435	0.051	0.963	-0.351	0.417
Flever	435	0.389	0.171	0.014	0.915
Fage	435	25.438	13.546	6	58
Panel B – Dummy Variables					
Variables				Frequency	%
Industry type	Manufacturing companies			54	62.06
	Non- Manufacturing companies			33	37.93
Internationalization	Internationalized companies			29	33.33
	Non-Internationalized companies			58	66.66

Source: Authors' calculations.

5.2. Correlation analysis

The results of the Pearson correlation analysis, as presented in Table 4, reveal several significant findings regarding the extent of CSD and its relationship with various factors. Notably, CSD demonstrates positive correlations with company size ($p < 0.01$), company profitability ($p < 0.05$), and internationalization ($p < 0.05$). This suggests that larger companies, profitable entities, and those engaged in international operations tend to disclose more social information, consistent with the study's expectations. However, contrary to the study's hypotheses, board size ($p < 0.05$) exhibits a negative correlation with the extent of CSD. Moreover, neither board independence ($p > 0.05$) nor audit committee independence ($p > 0.05$) show significant correlations with the extent of CSD. Regarding the control variables, industry type ($p < 0.01$) demonstrates a positive correlation with CSD. However, company leverage ($p > 0.05$) and company age ($p > 0.05$) do not exhibit significant correlations with the extent of CSD.

The results presented in Table 4 also confirm the absence of severe multicollinearity issues among the independent variables. According to Gujarati (2003), multicollinearity becomes problematic when the correlations between explanatory variables are strong and significant. While there is a moderate correlation of 0.776 between board independence and audit committee independence, the correlation coefficients between other independent variables are relatively low. Furthermore, the low variance inflation factor (VIF) values in Table 5, with the highest being 1.748, are well below the commonly accepted threshold of 5 or 10. These VIF values, along with the low correlations, indicate that the model does not suffer from serious multicollinearity concerns.

Table 4. Correlation results

	CSDI	Bsize	Bind	ACind	Fsize	Fprof	Inter	Flever	Fage	InType
CSDI	1									
Bsize	-0.178*	1								
Bind	0.247	-0.258	1							
ACind	0.074	-0.104	0.776*	1						
Fsize	0.476**	0.407*	-0.033	0.052	1					
Fprof	0.114*	0.188	0.048	0.018	0.178	1				
Inter	0.402*	0.17	0.655*	0.055	0.31*	0.475*	1			
Flever	0.024	0.093	-0.113	0.122	0.129	0.116	0.039	1		
Fage	0.263	0.124	-0.118	-0.107	0.253*	0.140*	0.066	-0.109	1	
InType	0.397**	0.285*	0.173	-0.029	0.137	0.192	0.054	0.066	0.004	1

* Significant at 5%.
** Significant at 1%.

Source: Authors' calculations.

5.3. Regression results

The OLS regression analysis examined the relationship between the extent of CSD and various corporate governance attributes and company characteristics. The model yielded statistically significant results (F-statistic = 7.25, p = 0), with an adjusted R-squared of 0.412, indicating that the independent variables and control variables collectively explain 41.2% of the variance in CSD.

Board size demonstrated a negative and statistically significant association with CSD extent ($p < 0.05$), suggesting that companies with larger boards tend to disclose less corporate social information, contrary to the initial hypothesis. This finding contradicts arguments posited that larger boards enhance monitoring and resource provision benefits. However, it aligns with a previous study by Ezzeddine et al. (2020), which also found an inverse association between board size and CSD levels. Furthermore, this result supports the postulates of agency theory and the conclusions drawn by scholars like Jensen (1993) and Cheng and Courtenay (2006) that smaller board sizes can enhance effectiveness, decision-making, oversight, and, consequently, CSD.

Both board independence ($p = 0.426$) and audit committee independence ($p = 0.605$) did not exhibit statistically significant relationships with CSD extent, thereby rejecting the second and third hypotheses. However, these results align with prior evidence from Alotaibi and Hussainey (2016) and Habbash (2016), who found no significant correlation between board independence and CSD in Saudi companies. Similarly, Aburaya (2012) showed an insignificant relationship between audit committee characteristics and environmental disclosure levels among UK companies. The non-significant results question whether directors classified as "independent" are truly detached from the company or instead represent "grey" directors with indirect interests aligned with the company. Without stringent regulations defining independence criteria, so-called "independent" directors may lack the objectivity to promote greater CSR transparency effectively.

Company size exhibited a positive and significant association with CSD levels ($p < 0.01$), confirming the fourth hypothesis and corroborating the findings of numerous previous studies (e.g., Macarulla, Talalweh, 2012; Alotaibi, Hussainey, 2016; Issa, 2017; etc.). This result supports the legitimacy theory's view that larger companies face greater

visibility and stakeholder pressures, incentivizing them to be more transparent about their social and environmental impacts.

Company profitability demonstrated a positive and statistically significant association with CSD extent ($p < 0.05$), confirming the fifth hypothesis, and supporting the legitimacy theory arguments that more profitable companies provide more CSD to gain legitimacy (Reverte, 2009). This finding aligns with previous studies by Macarulla and Talalweh (2012), Razak (2015), and Issa (2017).

Internationalization also showed a positive and significant association with CSD levels ($p < 0.05$), supporting the sixth hypothesis and aligning with legitimacy theory arguments that companies engaging in international operations increase disclosures to gain legitimacy across different operating contexts (Chapple, Moon, 2005). This finding is consistent with the results of Dyduch and Krasodomska (2017).

Regarding control variables, industry membership ($p < 0.01$) had a positive, and significant relationship with CSD extent. This implies that companies in manufacturing industries tend to disclose more CSD, confirming prior evidence from Ho and Taylor (2007) and Habbash (2016).

Company leverage was not significantly related to CSD levels ($p = 0.502$), potentially because creditors focus more on financial risk than CSR practices when assessing companies. This finding is consistent with prior studies by Razak (2015) and Abdulhaq and Muhamed (2015). Moreover, company age also did not have a statistically significant association with CSD extent ($p = 0.078$). This may be because organizational tenure or longevity does not necessarily translate into more extensive CSD practices among Saudi companies. Both younger and older companies could face similar internal and external pressures to be transparent about their social and environmental impacts, irrespective of how long they have been established. This finding is consistent with prior studies by Issa (2017) and Boshnak (2022).

Table 5. Regression results

	Unstandardized Coefficients		**T**	**Sig.**	**Collinearity**	
	B	**Standard Error**			**Tolerance**	**VIF**
Intercept	-0.182	0.021	-0.605	0.153		
Bsize	-0.118	0.045	-3.480	0.018	0.853	1.173
Bind	0.036	0.087	1.482	0.426	0.876	1.142
ACind	0.043	0.061	1.514	0.605	0.817	1.224
Fsize	0.072	0.018	2.877	0.000	0.696	1.438
Fprof	0.002	0.010	1.234	0.015	0.729	1.372
Inter	0.008	0.002	3.617	0.032	0.652	1.533
Flever	0.081	0.003	0.674	0.502	0.747	1.352
Fage	0.032	0.018	1.776	0.078	0.751	1.412
InType	0.114	0.036	3.131	0.002	0.921	1.085
Adj. R-Squared	0.412					
F-value	7.25					
Sig.	0.000					

Source: Authors' calculations.

5.4. Robustness test

There exists a potential temporal mismatch between the explanatory factors influencing CSD and the actual disclosure practices adopted by companies (Li et al., 2022). This discord arises due to the inherent nature of CSD, which often pertain to past social and environmental activities, contrasting with the forward-looking orientation of strategic planning processes (Liu, Anbumozhi, 2009). To address this potential timing discrepancy and validate the robustness of the findings, a lagged regression model was employed, following the work of Liu and Anbumozhi (2009). In this approach, the explanatory variables were lagged by one year (t-1 values) to assess whether they better elucidate the social disclosures made in the subsequent year.

The lagged model incorporated company size, company profitability and company leverage as the lagged variables, while the remaining factors were not lagged, as they exhibited minimal year-to-year fluctuations. The results of the lagged model (Table 6) remained largely concordant with the main results (Table 5). The independent variables board size ($p < 0.05$), company size ($p < 0.01$), company profitability ($p < 5\%$), internationalization ($p < 0.05$), and industry type ($p < 0.01$) maintained a significant association with CSD practices. Conversely, board independence ($p > 5\%$), audit committee independence ($p > 5\%$), company leverage ($p > 5\%$), and company age ($p > 5\%$) persisted in exhibiting no statistically significant relationship.

Therefore, the lag time analysis substantiates the robustness of the original findings, despite the potential timing mismatch between the explanatory variables and social disclosure practices. The consistent results obtained from the lagged model bolster the credibility and reliability of the study's conclusions.

Table 6. Lagged regression results

	Unstandardized Coefficients		T	Sig.	Collinearity	
	B	Standard Error			Tolerance	VIF
Intercept	-0.793	0.011	-1.169	0.247		
Bsize	-0.12	0.044	-3.673	0.032	0.856	1.169
Bind	0.425	0.079	1.571	0.05	0.831	1.203
ACind	0.984	0.063	1.728	0.086	0.931	1.074
Fsize	0.003	0.018	2.856	0.000	0.480	2.085
Fprof	0.307	0.007	-0.075	0.021	0.622	1.609
Inter	0.02	0.001	3.631	0.014	0.577	1.734
Flever	4.263	0.006	0.206	0.117	0.618	1.589
Fage	0.196	0.003	1.586	0.078	0.601	1.604
InType	0.112	0.037	2.938	0.004	0.921	1.085
Adj. R-Squared			0.416			
F-value			7.428			
Sig.			0.000			

Source: Authors' calculations.

6. CONCLUSION

This study contributes to the growing body of literature examining the determinants of CSD practices by investigating various corporate governance mechanisms and company characteristics' impact on CSD levels among listed companies in Saudi Arabia. By

leveraging a comprehensive dataset spanning 435 firm-year observations from 2015 to 2019, this research provides robust empirical insights into the factors shaping CSD in the Saudi Arabian context.

The findings reveal a significant negative association between board size and the extent of CSD, contradicting the notion that larger boards enhance monitoring and disclosure practices. This result aligns with agency theory perspectives, suggesting that smaller boards may exhibit greater efficacy in decision-making and oversight, consequently promoting more extensive CSD. Conversely, the non-significant results for board and audit committee independence question whether directors classified as "independent" truly lack ties to the company or instead represent "grey" directors with indirect interests aligned with the company. Without stringent regulations defining independence criteria, so-called "independent" directors may lack the objectivity to promote greater CSR transparency effectively.

Consistent with the expectations of legitimacy theory, the results indicate that larger companies and those with higher profitability tend to disclose more social information, potentially due to increased visibility, stakeholder pressures, and the need to maintain legitimacy. Furthermore, the study finds that companies engaged in international operations exhibit higher levels of CSD, corroborating the notion that such companies face heightened scrutiny across diverse operating contexts, incentivizing them to be more proactive in disclosing their social impacts.

The control variables reveal that companies in manufacturing industries tend to disclose more CSD, while company leverage and company age do not exhibit significant associations with disclosure levels. These findings contribute to the ongoing discourse through the presentation of empirical evidence from the Saudi Arabian context, where CSD practices are still in their nascent stages.

Despite the valuable insights generated, the use of an unweighted disclosure index may not fully capture the relative importance or depth of specific CSD items. Furthermore, the study's focus on annual reports as the primary data source may overlook other communication channels employed by companies for CSD. Future research could consider incorporating weighted disclosure indices and examining multiple disclosure channels to gain a more comprehensive understanding of CSD practices.

Additionally, as the concept of CSD continues its development, it would be valuable to explore the effects of newly emerging factors, such as sustainability governance mechanisms, stakeholder engagement practices, and the role of sustainability reporting frameworks, on CSD. Exploring these aspects could provide a more holistic perspective on the drivers and dynamics shaping CSD practices in Saudi Arabia and other contexts.

The findings offer valuable insights for policymakers, regulators, and corporate decision-makers alike; highlighting potential areas for enhancing transparency, accountability, and sustainable business practices within the Kingdom's rapidly evolving corporate landscape.

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Farouck Oumar SANOGO[1]
Esra SİPAHİ DÖNGÜL[2]

CHARACTERISTICS AND RECRUITMENT STRATEGY OF GENERATION Z IN INDUSTRY TRADES: AN EXAMPLE OF THE WELDER PROFESSION[3]

Generations Y and Z may show different tendencies in the job market and prefer different management approaches. Generation Z can enter the language of economic actors as anxious or carefree. The emergence of new professions, more liberal and adapting to these young people, pushes them away from industrial professions. This study aims to propose a change in recruitment methods to professionals in the industrial sector, primarily in the welding profession, or, if necessary, to human resources departments. The analyzes carried out on the questionnaires filled out by 152 volunteer participants, most of whom are university and graduate students, were analyzed with the IBM SPSS Statistics 26 FixPack 1 program and studied at a 95% confidence level. In the analysis, the frequency and percentage values of the categorical variables were determined. The relationship between university, gender and age and categorical variables was analyzed by Chi-square test. Study results; the importance of digital resources in the job and internship search process, the priority of company reputation and working environment in job selection, the effect of personal passion on educational preferences and the low interest in the welding profession, In addition, factors such as the importance of the job and its guarantee are also decisive in the choice of profession. This study is thought that the study will represent an analytical support for companies and SMEs that enable them to take the necessary measures to counter today's harsh reality.

Keywords: strategies, resource, industries, production, Generation Z.

[1] Farouck Oumar Sanogo, İstanbul Gedik University, Graduate Education Institute, İstanbul, Turkey; e-mail: faroucks@gmail.com (corresponding author). ORCID: 0009-0004-9334-9902.
[2] Esra Sipahi Döngül, Aksaray University, Aksaray, Turkey; e-mail: dresrasipahi@gmail.com. ORCID: 0000-0002-6495-4378.
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1. INTRODUCTION

Becoming a professional or an expert in a sector of activity mainly involves the ability to choose one's career, to make the choice of one's professional orientation. The notion of professional orientation appeared in the 1900s, at the crossroads between school and professions and under the scientific auspices of psychology (Martin, 1940). Orientation, also called educational and professional orientation or professional, university and career orientation, consists of offering a person of school age and even adults (compulsory or post-compulsory, even permanent or continuous) the different streams in which they could fit in according to their interests, their previous school career, and their personality (OCDE, 2014). Career choice is a crucial and very important step in the life of any person (man or woman). This choice engages both the individual (student or not), his family, and in some cases his entourage (Hoibian, Millot, 2018). This is a decision that should not be taken lightly. At this stage of life, social pressure pushes us to ask ourselves several questions: what to choose? What do I want to do as a job? What are the most promising jobs? What are the opportunities in the sector or who is available to me? The Organization for Economic Co-operation and Development (OECD), in its Review of Career Guidance Policy, defines career guidance as "services and activities designed to help people, at all ages and at all stages of their lives, to make choices in education, training, and occupation and to manage their careers" (Jacques, 2017). In some cases, choosing what we want to do as a job can become a real headache for some of us. The choice of professional orientation, which should normally be a personal decision based on our deep aspirations and our skills acquired throughout our college and high school careers, is greatly impacted by several exogenous parameters such as the society in which we find ourselves, the family, guidance counselors, the media, the state, and the job market. When we leave high school, we are immediately confronted with the reality of the career choice that will determine the rest of our studies or our professional future. There are indeed several possible career choices, several types of training and many professions, many of which are very little known, often categorized, and suffer from a severe lack of personnel. These professions, as important as they are, often end up disappearing under the weight of new professions and their very persuasive communication strategies.

Indeed, in recent years we have witnessed the rise of several active sectors with attractive content and which are increasingly solicited by young people. These are the information and communication technology (ICT), construction, health, finance, jurisdiction, communication, journalism, computer engineering, film etc. sectors. In France, for example, the vocational training market has undergone many developments in recent years. The latest reform to date, the "Professional Future" Law of September 5, 2018 gives each person the freedom to choose their professional future. This is thanks to the introduction of the Personal Training Account (CPF) and by strengthening companies' investment in the skills of their employees (Travailemploi, 2019). According to the 2021 Training Barometer, the most popular courses for workers are training in the field of IT, in foreign languages, and more particularly in English, Management training (Lemaigre-Voreaux, 2021). However, some sectors such as manufacturing, particularly welding, are full of aging employees close to retirement (Khomri, 2019). The sector suffers from a glaring lack of young talent, qualified employees and may be in danger of disappearing. Too many young people still have a dusty image of this sector. According to a survey Harris Interactive for Coca Cola Enterprise on the occasion of Industry Week, 30% of 15–34-year-olds say they have a bad image of jobs in the industry (Lévy et al., 2021).

- The image of an old-fashioned sector,
- Male occupations,
- Employs low-skilled profiles,
- Do not hire,
- The industry pays poorly,
- Working in a factory is repetitive, painful and dirty.

These prejudices make these sectors the target of general indifference, especially among young people. That is why, faced with this situation and in the perspective of searching for solutions, the theme of this study focuses on "a strategy to attract and recruit young people into industrial jobs in a context where workers are aging". Since the industrial sector is so broad, the choice made is mainly to focus on the specific form of the metallurgical sector, especially the welding profession, which is positioned as the heart of this discipline.

2. THE PROBLEM

In summary, the current socio-demographic situation and the increasing number of articles and reports on the phenomenon inspire the subject of this research. The theme of the study focuses on the factors of attraction and recruitment of human resources in industrial professions. More specifically, the problem refers to the difficulty of attracting quality candidates in sufficient numbers, in a context of aging current employees. The objective of this study is to find out the incentives, i.e. the pull factors that allow the recruitment of young adults to an employer, more specifically in the welding sector.

2.1. Research Hypotheses

Strategize for a solution where aging employees in certain sectors are retiring while potential young employees are not interested in these jobs, putting certain sectors at risk of not being able to continue production and manufacturing.

Hypothesis 1: Potential young employees are not interested in these jobs due to a negative or outdated perception of these sectors.

Hypothesis 2: Young potential employees are attracted to sectors that offer more innovative, technological career opportunities and are in line with current trends.

Hypothesis 3: Promoting the positive image and reputation of the sectors concerned, highlighting career opportunities, job stability and associated benefits, can attract more young talent.

2.1.1. The objectives of the research

The objectives of this research are as follows:

- Understand the factors that influence the disinterest of potential young employees in certain jobs in these sectors.
- Identify the career and employment needs, expectations and motivations of potential young employees.
- Assess the challenges and barriers that aging employees face when considering retirement.
- Review best practices and successful initiatives in other sectors to attract and retain young talent.
- Present a theoretical framework specifying the origin, concepts, and evolution of the welding sector.

- Respond to research issues and understand the link between existing communication strategies and their influences on young people.
- Highlight the different strategies that arise from the promotion and marketing of services.
- Know the essential points that must be taken into consideration when implementing marketing communication strategies in order to create attraction around the sector.
- Give a clear and precise idea about welding and show its great role in the industrial and production sectors.

3. LITERATURE

3.1. Understanding Young People (Generation Z) With A View to Attracting and Recruiting Them

Generation Z is the generation of people born between 1996 and 2012. As was the case with Generation Y, Generation Z goes by different names. The letter Z, in addition to following alphabetically the two previous generations (X, Y), would mean “zapping” and would come from the tendency of this generation to zap what it does not consider useful (Allain, 2014). Michael Wesh called individuals “emos” in relation to their will being guided by their emotions. They are also categorized with the pseudonyms “I-Generation”, in relation to their close connection with the internet, "WTF generation", for Wikipedia, Twitter and Facebook, or “hashtag generation” for the popularized use of the day. On social networks during their youth (Élodie, Marie-Ève, 2018). In addition, it is under the name of “Generation C” (connect, communicate, create, operate) or “Generation CLIC” (creative, lucid, honest, collective) that we hear a lot about them (Allain, 2014). However, this 4 C rule may vary depending on the study. Some authors replace the term “connect” with “critical thinking”" (Allain, 2014). So much so that others speak of Generation C for “connected, communicative, content-centric, 'computized', community-based and click-through all the time” (Roman et al., 2011).

3.2. Profiles of Generation Z

The definition and meaning of the term “generation” differ depending on the context in which it is used. The demographer will consider a generation to be all the individuals born in the same year. The genealogist will use this word to classify people on the same floor of a family tree. In addition, the historian will use it to calculate the duration of the renewal of men in society.

In sociology, a generation is a group of individuals who have experienced the same historical, economic, and social events over the same period... This reflection of the society in which young people have grown up creates behaviors characteristic of the generation, based on a culture that will mark their whole life (Khodorowsky, 2015).

In order to identify the birth of the individuals making up Generation Z, it is interesting to return to the evolution of the generations beginning in the 21st century.

Sociologists distinguish society into five types of generations:

- The silent generation, population born between 1925 and 1942,
- Baby-boomers, population born between 1946 and 1964,
- Generation X, population born between 1965 and 1979,
- Generation Y, population born between 1980 and 1995,
- Generation Z, population born between 1995 and 2010,

- Generation Alpha, population after the year 2010.

The generation is not only specific to an age group, but also specific to a major economic, technological, and societal evolution.

The political, economic, social and cultural context confers on a generation trait that will determine its history: its lifestyle, its values, its cultural practices, etc. will remain markers that necessarily interest marketing and communication professionals (Khodorowsky, 2015).

3.3. The Silent Generation

The silent generation is that of people born between 1901 and 1944, although some studies classify it more between 1925 and 1942 (Pierre, 2020). These people generally have a conservative spirit; they are attached to traditions, the transmission of values, and loyalty. They live according to a rigid pattern, which they know well and do not want to change (Pierre, 2020). The silent generation, also known as the traditionalists, is now retired or dead. It marked the economic world by its strong involvement in the world of work and generally by its lack of demands. Appreciations are long and changes in society were slow in their time (AgileMontreal, 2019).

3.4. Baby Boomers

The generation of baby boomers is that of the children of the silent generation. Most of them were born during the "baby boom", the birth rate peak that took place after the Second World War. It extends approximately from 1945 until the mid-1960s (the years vary according to the studies) (Khodorowsky, 2015). This peak is mainly due to post-war rejoicing. Most baby boomers grew up during the postwar period, between 1945 and 1975. They witnessed unparalleled economic growth and a sharp improvement in living standards. Growth is felt in all sectors, and fundamental advances are taking place. In medicine, we see the arrival of oral contraceptives or the vaccine against polio (Allain, 2014). In terms of their behavior and state of mind, they are optimistic and individualistic. They value recognition and immediate gratification and reject authority. Unlike their parents, the man and the woman now work a lot. They devote little time to their hobbies, emphasizing their careers, which they want to be beautiful and prolific. They are looking for a good salary as well as a good title above all, and for this reason, they see the change of job as a negative thing. They are people who prefer face-to-face interactions and are competitors (Allain, 2014). Having entered the job market with exceptional job opportunities, baby boomers are considered valuable collaborators for companies. Indeed, coming from the post-war period of 1945, they work with the expectation of remuneration commensurate with their efforts to meet the needs of their country in reconstruction (Alain, 2007). From an economic point of view, they experienced the postwar boom and the genesis of consumer society. Today, the majority are retired; "the grandpa-boom peaked in 2017". Their strong values of belonging (both family and professional) will be instilled in the education of their children, who mostly belong to Generation X. Today, the retirement of baby boomers raises many questions. Around 2025, a majority of them should have ceased to exercise their work. A significant death curve should appear in the countries affected by the baby boom, as well as an increase in vacant jobs (Alain, 2007).

3.5. Generation X, Y or Millennial and Z

Faced with a shortage of jobs in certain sectors, Generation X is in a period of social transition (from the end of colonialism to the Chernobyl accident), marked by strong

economic events (stock market and oil crashes in 1973), the appearance of AIDS in 1980, and the rise of the media. The term Generation X has been used in a couple earlier ways, but the primary use of the term now is used to define the generation following the Baby Boomers. Generation X or Gen X for short was also known as the Baby Busters, the Latchkey Generation, and Post-Boomers (Robert, 2021). Professionally, unlike Generation Y, which is very loyal to their employers, Generation X "has many requirements. They need to learn, grow, and experience." The purposes are therefore very different since Generation X "ensure that work is a key to their development" (Rocci, 2019). Indeed, the "X" who are the parents of Generation Y and Generation Z, are concerned about the balance between personal life and professional life. While getting involved in taking up their duties, the search for this balance leads to more self-centered and stressed behavior.

Also called "millennials" or "digital adopters", the individuals making up Generation Y were born between the end of the 70s and the mid-90s. Again, the dates may vary slightly depending on the studies. The name "Y" has several origins. The most obvious is the one that simply implies that it is the letter after X. A second theory would have the letter "Y" chosen for its phonetic translation, in English "why", because Generation Y is defined as one of those who will most question certain fundamental principles. Finally, the last explanation would like the Y to be the pictorial representation of the intersection of the wires of the headphones coming out of the walkmans, mythical objects of this period. People of this generation are largely the children of baby boomers, which is why they are often given the label of "echo-boomer". They also share many values with their predecessors, including self-esteem, interest, and enjoyment (Pierre, 2020). What will mark this generation is the acceleration, in all areas. Advances in computing are colossal: they include the evolution of computers, telephones, which became portable, televisions, and especially the internet. The world is becoming global; all countries are at your fingertips. Which opens a window on the world to anyone in just a few clicks. Young people are cradled in this technology from an early age and will have an intuitive mastery of these tools, and they will often be more alert than previous generations, quickly overtaken by progress. Given their openness to the world, they are in search of personal development and a good quality of life, which promotes the omnipresence of ever more invasive media. The main leitmotif of Generation Y is the adage of the win-win relationship. His relationship with employment is therefore different from previous generations since what changes with the young Generation Y is that, for him, the divide between professional place and private place does not exist; the work is therefore carried out wherever it sees fit (train, café, office, etc.); what matters is the result. Thus, the young person can work at his place of work; the converse being moreover true: there is no harm in having fun at his place of work, which ultimately is only one place… among others (André et al., 2012).

Generation Y youth have certain expectations of their workplace (Quialacote, 2010). Indeed, the latter must be:

- **Stimulating**: the work must present opportunities to learn, to allow a certain improvement in the field, and to overcome the limits of the known.
- **Flexible**: the flexibility of schedules due to the hectic pace of life is relatively important for Generation Y.
- **Financially generous**: due to the lack of succession in all sectors, they have a wide choice of employers offering competitive salaries in order to eventually meet the needs of a family to support.

- **Positive and entertaining**: a friendly working atmosphere, where a somewhat playful atmosphere reigns, is a good incentive for Generation Y to feel involved.
- **Focused on collaboration**: the work team represents, for Generation Y, an almost essential tool for the achievement of objectives. The cooperation of the superior is also of undeniable importance in order to support the work of the employee.
- **Goal-oriented**: Millennials have well-established career goals when investing in a business. To stir up their loyalty, the company must ensure that these expectations are met.
- **Respectful**: these workers give as much as they receive. Although they generally have little experience, they are willing to listen to advice if they are also listened to in return.
- **Technological**: in order to stimulate them, the use of the latest technology is an effective means. They like to update themselves on the latest technological tools that can improve the quality of their work.

Looking more closely at the expectations of Generation Y young people, regardless of their country of origin, the fact remains that they do overlap in a few aspects.

Generation Z, this new generation represents nearly a third of the active population in France or 26% (versus. 7% in 2019), is not just an accentuated Generation Y or "2.0" version (Hrmaps, 2021). There is a real paradigm shift, generating a strong cultural evolution, even with Generation Y. The impacts are profound. To understand the members of this generation, it is first necessary to identify in general their origins, their skills and their personalities.

Young people born during this movement are also called "Gen Z" or "slashers" (Phyllis, 2023), they are defined by several attributes, such as "digital native", the silent generation, or even the Z (Z in alphabetical order but also Z for Zapping) (Allain, 2014). So many nicknames whose origins come mainly from the context of their appearance. Indeed, like any generation defined by sociologists, the Zs have been marked by an economic, historical, and social context. This population first went through the financial crisis of 2008, the tsunami in 2004 or even the rise of radical Islamism, which caused attacks around the world such, as the attack of September 11, 2001. At the economic level, optimism is not at homes. Thus, often educated in a blended or single parent family (Generation X or Y), Generation Z is used to an uncertain world (Allain, 2014). This economic period is underlined by the appearance of numerous NICTs (smartphones, high-speed internet, tablets, etc.), which explains the term digital native. Finally, at the social level, it is the social networks that will affect their various behaviors. Nevertheless, this analysis remains cautious since this societal phenomenon cannot be generalized to each individual born during this generation. Sociologists do not all agree on the lengths of generation dates, nor on the denominations used related to their skills, personalities and aptitudes.

To understand the skills of Generation Z, it is necessary to direct your research through studies in psychology. Generation Z has grown up in a sphere of cell phones, resulting in a mastery of these tools in speed and automation. This is the observation that we can make when we observe the ease with which a young person can take hold of a new application or the latest mobile phone marketed compared to their elders. The creativity, multitasking, and enterprising behavior of young Z are all assets illustrating their desire to be actors in their own lives by showing inventiveness and imagination (Allain, 2014). Nevertheless, these young people report less developed reasoning and self-control than previous generations at the same age. Despite the daily use of digital tools, Generation Z has been

the subject of a study by the French government's digital university and the report concludes that the latter is skills are “very superficial and reflect a confusion between habit and skill. Teenagers use computer resources in a quantitative way, and lack the critical perspective to ask themselves the question of the truth of the information” (Elodie, 2016). Alongside their innate abilities, Generation Z exudes a personality very specific to their movement.

Without generalizing, the behaviors and personalities of these young people, hired as interns (for the moment) and shortly as juniors, will make it possible to identify their expectations in the professional environment. It is interesting to question their visions of the business world, their feelings about the ideal position, and their professional aspirations to contribute to the projects of their future employers (Kingman, 2017). Generation Z highlighted some priorities, which they are much more concerned about than the members of older generations, which mainly related to diversity and equality: Generation Z were far more concerned about prejudice towards people, gender equality and racism (Kingman, 2017). In 2025, the economic succession will pass into the hands of young people born between 1995 and 2000. There is no need to wait until 2025 to verify that with them, a new culture is taking shape” (Marie, Florence, 2015). In this forced march towards a new model, the risk is to create incomprehension and resentment, hence the need to understand the desires of this movement.

This generation expects a lot from its professional environment and from the job market (Gigon, 2021):

- **Give meaning to their work**: often responsible for social and environmental issues, this generation is very attentive to the actions of the company to which they are going to apply. According to a YouGov study; in 2021, 78% of people aged 18-24 would not accept a job that did not make sense to them.
- **Be autonomous**: in the age of entrepreneurship, these young people are not afraid to leave a company to try their luck with a project that is close to their heart or in a company that will give them more autonomy and flexibility at work, (it is not necessary to call your employee every 2 hours when he is teleworking).
- **Flexibility and adaptability**: this point joins the previous one. For the Zs, the routine 9 a.m. to 5 p.m., the “metro-work-sleep” is over. A day or two of teleworking per week, variable working hours to organize their days as they wish or even the 4-day week, if you want to be even more innovative!
- **Team spirit**: even if this generation wishes to be independent, it attaches great importance to the team. According to a Mazars and OpinionWay study, 56% of them consider the working atmosphere and exchanges with colleagues as determining factors in motivation. Hyperconnected but sociable, according to Mazars and OpinionWay, 79% of them expect the company to offer a physical workspace. Even though we are surely living the height of remote working, it is important for them to bond with their colleagues (Mazars, 2019).
- **Recognition**: There are two new forms of recognition that Generation Z is asking for.
  - Existential recognition: this involves recognizing the employee for who he is (his character, his personality, his history, etc.). The employee needs to be recognized as a unique person and as one collaborator among many others for the company.
  - Integrative recognition corresponds to the management of change. It stems from this generation's desire to change things.

It is important not to underestimate the young members of generation Z. They have a new way of working and can bring a lot to table with their skills. We must therefore make the necessary efforts to understand them and the changes they will introduce in the world of work.

By listening to the desires of this generation, the company would be revisited, transformed to meet their aspirations. The Zs surveyed (Sachot-Moirez, Urmès, 2015) described the perfect company:

- More trusting: from a control system to a trust system,
- The company will have to let go and trust the youth;
- More agile: the z company is more innovative, more open to failure;
- Simpler: these digital natives dream of a company in the image of the horizontality that digital allows, i.e. A flattened hierarchy, less complex, more flexible;
- More human-oriented internally and externally;
- More egalitarian: a less discriminating company for a generation that advocates fairness and meritocracy;
- More flexible: the Z want companies that are flexible, both in terms of hours, pace, place of work, and codes seen as too rigid;
- More meaningful: a company that impacts society, having that extra soul that makes young employees join the project… get up in the morning.

Thus, the days of the 'little boss' and hyper-hierarchical structures are over. The weight of the process risks suffocating them and scaring them away. This is why their career logic is not necessarily a will, but they favor self-entrepreneurship by wanting to be their own bosses. "We cannot know whether teenagers will take the plunge into starting a business, but what we do know is that they now say they want to become entrepreneurs. They will even seek to reconcile the status of employee with that of auto-entrepreneur to carry out several activities simultaneously" (Élodie, Marie-Ève, 2018). Finally, the young Z dreams of international. Like their elders who discovered the Erasmus Programs to continue their training abroad, Generation Z wants to start their career abroad. The digital evolution has made it possible to cross borders and take an interest in the cultures of other countries by integrating free access networks. Young Z perceives this opportunity to travel as a form of attraction in which his playing field is expanded. In conclusion, young people in Generation Z are constantly looking for challenges. They are not afraid of failure, and see it instead as a way to bounce back and improve. They expect their superiors to entrust them with stimulating assignments.

4. METHODOLOGY

The survey analyses were carried out with data from 152 volunteer participants who filled out the questionnaire. In the study, the sample was selected with appropriate sampling. It is a sampling of (voluntary) individuals who are easy to reach, available and willing to participate in the research (Christensen, Johnson and Turner, 2015; Yıldız, 2017). Researchers use whatever sample units are readily available. Thus, an academician can choose the students in his class, or a researcher can choose the first 200 people who accept the survey on the street. The researcher is unlikely to estimate the representativeness of the sample. Thus, in proper sampling, the parameters of the universe cannot be predicted (Nachimas and Nachimas, 1996; Yıldız, 2017). The data discussed in this study were collected through the Google Form with the survey application between January 2023 and April 2023. The analyzes carried out on the questionnaires filled out by 152 volunteer

participants, most of whom are university and graduate students, were analyzed with the SPSS 21.0 program and studied at a 95% confidence level. In the analysis, the frequency and percentage values of the categorical variables were determined. The relationship between university, gender and age and categorical variables was analyzed by Chi-square test. The data were analyzed with the IBM SPSS Statistics 26 FixPack 1 program. The survey consisted of two separate question sections that made it possible to highlight the analysis. These questions are about participants' values, job perceptions, etc. It is related to. The questions were grouped according to job attractiveness factors and mobility propensity factors. As for pull factors, these constitute the characteristics of the job that attract young people to an organization, or more precisely, the individual's motivations for choosing to work there. Factors related to mobility propensity influence age, gender, employment status, etc., determining whether one individual is more mobile than another, which in turn affects whether the latter leaves his job or not.

4.1. Ethical Considerations

The questionnaire was presented to the respondents online with an explanatory header defining the purpose of the study so that they provided informed consent if they chose to participate in the study. Confidentiality was an aspect whose importance was not neglected. All questionnaires were coded to preserve the identity of respondents.

5. FINDINGS

5.1. Demographic variables

This step consists of presenting the details of our study sample. Numerical data and percentage of participation.

Table 1. Demographic Variables

		n	%
Gender	Woman	58	38,2
	Man	94	61,8
Age	15-20	25	16,4
	21-25	66	43,4
	26 years and plus	61	40,1
School level	College	3	2,0
	High Scool	6	3,9
	Bachelor	75	49,3
	Master	58	38,2
	Others	10	6,6

Source: Authors own work.

This table presents the descriptive statistics of demographic characteristics of university students. The data includes information about the distribution of students based on gender, age, and school level. The sample consists of a total of n=152 students. Gender distribution indicates that 38.2% of the students are female, while 61.8% are male. In terms of age, the majority falls within the 21–25 age range (43.4%), followed by 26 years and above (40.1%), and 15-20 (16.4%). Regarding school level, the distribution shows that 49.3% of students are pursuing a Bachelor's degree, 38.2% are at the Master's level, and

the remaining percentages are distributed across College, High School, and other categories.

5.2. Variables of School and Work Life

This step presents the interpretation of the data relating to the level of education and professional life variables.

Table 2. Variables of School and Work Life

		n	%
Have you ever done an internship or job search?	Yes	104	68,4
	No	48	31,6
How do you do your company research for a job or internship?	Internet (google, yahoo...)	68	44,7
	Social networks (LinkedIn, Facebook...)	66	43,4
	Advertisements (newspapers, TV, articles...)	9	5,9
	Others	9	5,9
If you are looking for a job or internship, what are your criteria for selecting a company before applying?	Company reputation	88	57,9
	Evolution prospects	50	32,9
	Salary	77	50,7
	Challenges	50	32,9
	The work environment (office, collaboration, atmosphere, ...)	86	56,6
	Others	2	1,3
Regarding your current training, why did you choose your current training and not another?	A passion	74	48,7
	The assurance of having a job	15	9,9
	Opportunities	41	27,0
	Salary	8	5,3
	Choice of parents, friends (external influence)	9	5,9
	Others	5	3,3
What is important to you at work or in a business?	Salary	33	21,7
	The work itself	73	48,0
	The work environment	19	12,5
	Challenges	26	17,1
	Others	1	,7
Are you interested in another job?	Yes	110	72,4
	No	42	27,6
Do you know the trade of welders?	Yes	74	48,7
	No	78	51,3
Could you or would you accept to become a professional welder or welders?	Yes	75	49,3
	No	77	50,7
In your opinion, what information do you need before choosing to practice a trade?	The importance of the job	78	51,3
	Job guarantees (opportunities)	31	20,4
	Salary	24	15,8
	The work environment	14	9,2
	Others	5	3,3

Source: Authors own work.

According to Table 2, it is possible to determine the tendencies and priorities of students and employees regarding job search, internship, job and education preferences.

68.4% of the participants searched for internship/job. This suggests that a large proportion of them have job search experience, which reflects respondents' interest and active efforts towards entry into the labour market. When looking for a job/internship, 44.7% of the participants do research on the internet (Google, Yahoo...) and 43.4% on social networks (LinkedIn, Facebook...). This highlights how important digital resources and social media are in the job search process.

The use of traditional media (newspapers, TV...) and other methods remains lower at 5.9%. 57.9% of the participants find the reputation of the company important and 56.6% find the working environment important. This shows the importance that the participants attach to the social and professional reputation of the workplace and working conditions when choosing a workplace.

Salary is an important criterion for 50.7% of respondents, revealing that financial expectations are an important factor in choosing a job. 48.7% of the participants chose their current education because of a passion. This suggests that individuals' personal interests and passions play an important role in their career choices. 27% made choices based on future opportunities, indicating that career prospects influence decisions.

While 48% of the respondents considered the job itself as the most important factor, 21.7% identified the salary as the most important factor. This shows that job content and working environment are more important than salary. 72.4% of the participants stated that they were interested in another job. This indicates that there may be dissatisfaction with their current job or that the number of people who want to make a change in their career is high.

While half of the participants (48.7%) know the profession of welder, 51.3% do not. This shows that there is a need to promote and raise awareness of the welding profession. While 49.3% of the participants can accept to be a welder, 50.7% do not favor this option. This suggests that the attractiveness of the profession needs to be increased.

Participants emphasized the importance of work (51.3%) and job guarantee (20.4%) as the most important information in choosing a profession. Factors such as salary and work environment were given less importance.

5.3. Relationship Between the Gender and the Variables

In this step we used the chi-square test to understand the relationships between the different variables in order to verify our hypotheses.

Hypothesis 1: Potential young employees are not interested in these jobs due to a negative or outdated perception of these sectors.

Hypothesis 2: Young potential employees are attracted to sectors that offer more innovative, technological career opportunities and are in line with current trends.

Hypothesis 3: Promoting the positive image and reputation of the sectors concerned, highlighting career opportunities, job stability and associated benefits, can attract more young talent.

Table 3. Examining the Relationship Between the Gender and the Variables

		Gender				Chi-Square	p
		Woman		Man			
		n	%	n	%		
Have you ever done an internship or job search?	Yes	42	72,4	62	66,0	,425	,514
	No	16	27,6	32	34,0		
How do you do your company research for a job or internship?	Internet	23	39,7	45	47,9	3,088	,378
	Social networks	30	51,7	36	38,3		
	Advertisements	2	3,4	7	7,4		
	Others	3	5,2	6	6,4		
If you are looking for a job or internship, what are your criteria for selecting a company before applying?	Company reputation	32	55,2	56	59,6	,133	,715
	Evolution prospects	16	27,6	34	36,2	,840	,359
	Salary	27	46,6	50	53,2	,633	,426
	Challenges	18	31,0	32	34,0	,042	,837
	The work environment	37	63,8	49	52,1	1,987	,159
	Others	1	1,7	1	1,1	,120	,729
Regarding your current training, why did you choose your current training and not another?	A passion	21	36,2	53	56,4	10,432	,064
	The assurance of having a job	6	10,3	9	9,6		
	Opportunities	20	34,5	21	22,3		
	Salary	2	3,4	6	6,4		
	Choice of parents, friends	5	8,6	4	4,3		
	Others	4	6,9	1	1,1		
What is important to you at work or in a business?	Salary	7	12,3	26	27,7	5,580	,134
	The work itself	33	57,9	40	42,6		
	The work environment	7	12,3	12	12,8		
	Challenges	10	17,5	16	17,0		
Are you interested in another job?	Yes	41	70,7	69	73,4	,031	,860
	No	17	29,3	25	26,6		
Do you know the trade of welders?	Yes	27	46,6	47	50,0	,171	,679
	No	31	53,4	47	50,0		
Could you or would you accept to become a professional welder or welders?	Yes	27	46,6	48	51,1	,292	,589
	No	31	53,4	46	48,9		
In your opinion, what information do you need before choosing to practice a trade?	The importance of the job	29	50,0	49	52,1	1,502	,826
	Job guarantees	13	22,4	18	19,1		
	Salary	8	13,8	16	17,0		
	The work environment	5	8,6	9	9,6		
	Others	3	5,2	2	2,1		

*p<0,05; chi-square test.

Source: Authors own work.

There is no significant relationship between gender and the variables ($p > 0.05$).

Table 4. Examining the Relationship Between the Age and the Variables

		Age						Chi-Square	p
		15–20		21–25		26 years and plus			
		n	%	n	%	n	%		
Have you ever done an internship or job search?	Yes	6	24,0	46	69,7	52	85,2	30,873	,000*
	No	19	76,0	20	30,3	9	14,8		
How do you do your company research for a job or internship?	Internet (google, yahoo...)	10	40,0	29	43,9	29	47,5	7,098	,312
	Social networks (LinkedIn, Facebook...)	12	48,0	31	47,0	23	37,7		
	Advertisements (newspapers, TV, articles...)	3	12,0	1	1,5	5	8,2		
	Others	0	0,0	5	7,6	4	6,6		
If you are looking for a job or internship, what are your criteria for selecting a company before applying?	Company reputation	14	56,0	43	65,2	31	50,8	2,715	,257
	Evolution prospects	7	28,0	18	27,3	25	41,0	3,024	,220
	Salary	14	56,0	36	54,5	27	44,3	1,683	,431
	Challenges	10	40,0	20	30,3	20	32,8	,773	,679
	The work environment (office, collaboration, atmosphere, ...)	11	44,0	41	62,1	34	55,7	2,453	,293
	Others	0	0,0	1	1,5	1	1,6	,403	,818
Regarding your current training, why did you choose your current training and not another?	A passion	14	56,0	35	53,0	25	41,0	11,748	,302
	The assurance of having a job	3	12,0	3	4,5	9	14,8		
	Opportunities	5	20,0	21	31,8	15	24,6		
	Salary	1	4,0	1	1,5	6	9,8		
	Choice of parents, friends (external influence)	2	8,0	3	4,5	4	6,6		
	Others	0	0,0	3	4,5	2	3,3		
What is important to you at work or in a business?	Salary	9	36,0	9	13,8	15	24,6	9,761	,135
	The work itself	7	28,0	35	53,8	31	50,8		
	The work environment	3	12,0	11	16,9	5	8,2		
	Challenges	6	24,0	10	15,4	10	16,4		
Are you interested in another job?	Yes	18	72,0	44	66,7	48	78,7	2,293	,318
	No	7	28,0	22	33,3	13	21,3		
Do you know the trade of welders?	Yes	9	36,0	28	42,4	37	60,7	6,145	,046*
	No	16	64,0	38	57,6	24	39,3		

Table 4 (cont.). Examining the Relationship Between the Age and the Variables

		Age						Chi-Square	p
		15–20		21–25		26 years and plus			
		n	%	n	%	n	%		
Could you or would you accept to become a professional welder or welders?	Yes	17	68,0	33	50,0	25	41,0	5,198	,074
	No	8	32,0	33	50,0	36	59,0		
In your opinion, what information do you need before choosing to practice a trade?	The importance of the job	13	52,0	35	53,0	30	49,2	5,266	,729
	Job guarantees (opportunities)	7	28,0	12	18,2	12	19,7		
	Salary	2	8,0	9	13,6	13	21,3		
	The work environment	3	12,0	7	10,6	4	6,6		
	Others	0	0,0	3	4,5	2	3,3		

*p<0,05; chi-square test.

Source: Authors own work.

There is a significant relationship between age and the status of searching for a job or internship ($p < 0.05$). Among those aged 15-20, 24.0% have searched, among those aged 21–25, 69.7% have searched, and among those aged 26 and above, 85.2% have searched for a job or internship. As age increases, the tendency to search for a job or internship also increases. There is a significant relationship between age and the response to the question "Do you know the trade of welders?" ($p < 0.05$). Among those aged 15–20, 36.0% are knowledgeable, among those aged 21–25, 42.4% are knowledgeable, and among those aged 26 and above, 60.8% are knowledgeable about the trade. As age increases, the level of knowledge also increases. These analyses do not confirm our hypothesis 1 that states: Potential young employees are not interested in these jobs due to a negative or outdated perception of these sectors. In summary, the chi-square test allowed us to reject hypothesis 1, because although having a strong relationship between age variables and knowledge of the trade, the data were not sufficient to support this hypothesis. In addition, hypotheses 2 and 3 were confirmed by the test because they had a significant impact on the image of the business and opportunities.

6. CONCLUSION

Companies strive to motivate and retain their employees through engagement and productivity efforts. The arrival of Generation Z and the high turnover rate of the workforce confirm this goal, which professions such as welding are looking for. This generation also carries projects, meanings and values that are often paradoxical. Even if it's just a trend, it's clear that Z's aspirations coincide with digital transformation, the exponential growth of the collaborative economy, and thus the birth of uberization. (Denis, Grégoire, 2016), firms must rethink their internal organization to adapt their recruitment systems and forms of attraction to the evolution of digital technology. In conclusion, the various investigations carried out throughout this research tend to affirm that the serious game for recruiting is an axis to be privileged. A real asset for developing the employer brand, corporate

gamification meets both the expectations of Z juniors and those of the new economy. In addition, the establishment of a fun career evening allows firms to attract and recruit differently. Gamification thus greatly contributes to:

- ambassadors.
- transform constraint into opportunity,
- creating positive emotions,
- promote interaction with the context of the game;
- extend the user experience,
- revalorize the daunting tasks of the recruiter,

transform employees into Finally, let's not put off hiring Gen Z differently! Viable methods in terms of attractiveness and recruitment have not yet been determined.

6.1. Theoretical implications

This study has several implications that should be put into practice by all organizations in general and those in the welding industry in particular. These implications are divided into recruitment and Generation Z-friendly attraction. For example, companies should use their traditional homepages and job portals to post jobs, as these are the platforms most used by Generation Z. They also use other sources such as radio, AMS and Willhaben to search for job opportunities. In addition, companies should also mark their presences on social networking sites, either by posting jobs themselves or by providing information about different things such as products, benefits, events, photos of colleagues, food, and offices. This is important because Generation Z is using these networks to look for jobs, they are becoming more and more active on these sites, and companies stay in their minds and attract them and will be able to recruit them unconsciously. Businesses should present a lot of information on their homepage and social networking sites. In addition, the homepage must be user-friendly and the information provided must be truthful, authentic and consistent. In addition, as mentioned above, welding companies should provide information about functional and symbolic benefits, but also make these benefits available to Generation Z candidates, as this represents an important pull factor in the workplace for them. Taking into account functional benefits, for example, companies should offer stable jobs, appropriate and generous salaries, and support employee development. Generation Z values companies that offer a canteen, flexible working hours, a home office, and a harmonious work environment. Professionals in the trade should offer fulfilling and interesting work, value employees and provide a good work atmosphere as a symbolic benefit. In addition, team building events, a good company reputation, a good registration period, and a short recruitment process are also important for Generation Z.

6.2. Suggestions for future research

For future work, it would be beneficial to deepen the research by first broadening the sample of interviews and surveys to get a broader perspective and focus on the impact of virtual reality and artificial intelligence tools on the skills management of young talent, and this, on a Turkish scale. If we take this idea further, why not undertake a study on the impact of emerging technologies, such as automation and robotics, on the future of the welding profession and the skills required to succeed. Explore how future welders can adapt and thrive in an industry in perpetual technological evolution.

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Oghenethoja M. UMUTEME[1]
Waliu M. ADEGBITE[2]

OPERATIONAL VARIABLES INFLUENCING TEAM EFFECTIVENESS, CULTURE, AND LEADERSHIP IN THE NIGERIAN OIL AND GAS PROJECT ENVIRONMENT

This paper examines the important factors influencing team effectiveness, culture, and leadership in the oil and gas project environment. The study focuses on four controlling variables: cross-culture, organizational culture, path-goal leadership, and team effectiveness. Cross-cultural dynamics greatly affect team dynamics, decision-making, conflict resolution, and project delivery. Organizational culture stresses collective learning and its impact on team members' mindsets. Path-goal leadership clarifies goals and provides support. Effective project teams collaborate, have strong leadership, and integrate individual viewpoints. The study provides valuable insights for Nigerian oil and gas industry project leaders to improve project outcomes aligned with organizational goals. Structural equation modelling (SEM) techniques are employed for data analysis, with the sample size determined based on SEM guidelines. PLS-SEM and CB-SEM approaches are compared, with CB-SEM achieving a higher coefficient of determination. The research suggests that achievement-oriented leadership behaviour and collaborative team processes are essential factors in defining key performance indicators (KPI) for project success.

Keywords: oil and gas, organisational culture, team effectiveness, project leadership, project environment variables.

1. INTRODUCTION

Several operational variables impact team effectiveness, culture, and leadership in the oil and gas project environment. These variables significantly influence the success of projects in the oil and gas industry. Therefore, it is important for project leaders to identify and pay attention to improving these dimensions to create a productive and team-cohesive project environment. In this paper, we have identified cross-culture, organizational culture, path-goal leadership, and team effectiveness as project-controlling variables.

[1] Oghenethoja M. Umuteme, UNICAF, Cyprus; e-mail: o.umuteme@faculty.unicaf.org. ORCID: 0000-0001-6203-2743
[2] Waliu M. Adegbite, University of Johannesburg, South Africa; e-mail: adegbitewaliu@gmail.com (corresponding author). ORCID: 0000-0002-0139-7041.

Culture can be understood as the collective programming of the mind that distinguishes the members of one group or category of people from others (Hofstede, 2011). It includes a wide range of shared beliefs, values, customs, traditions, symbols, and behaviours that are learned and passed down from generation to generation within a specific community or society. Research has demonstrated that cross-cultural differences are observed within project teams (Kirkman, Shapiro, 2001). Cross-cultural dynamics within a project team can significantly influence team dynamics, decision-making processes, conflict resolution, and overall project delivery. The influence of cross-culture within a project environment can be noticed from the presence of varied communication norms, such as directness or indirectness, high context or low context communication, and the use of non-verbal cues, which can affect the clarity and effectiveness of team communication.

Also, cross-cultural teamwork varies between collectivist and individualistic approaches. Although the presence of diverse perspectives can enhance creative problem-solving, but may also lead to conflicts, lack of cohesion, and challenges in reaching consensus if not effectively managed. The literature identifies several dimensions that are commonly associated with cross-cultural theory (Dorfman et al., 2012; Hofstede, 2011). However, four of these dimensions have been investigated in this study because they encompass the key aspects and factors relevant to the understanding of cross-cultural differences within project teams. These dimensions include power distance, uncertainty avoidance, individualism versus collectivism, and long-term versus short-term orientation.

In accordance with the explanation of culture posited above, organisational culture is explained as the collective learning within a group, encompassing a wide range of psychological elements, including behaviours, emotions, and cognitive processes (Schein, 2010). It highlights the influence of group interactions, experiences, and shared knowledge on the psychological functioning of its members of a project team. There is the need for team members to understand the process of recognizing, perceiving, or creating meaningful patterns or structures from the information or experiences at their disposal in the organisation.

Again, cultural integration within the team to develop a coherent worldview, reconciling contradictions, and able to connect different perspectives or domains of professional knowledge within the organisation. We have considered the dimensions of the Denison model of organizational culture theory, which suggests that a strong and positive organizational culture, is characterized by high scores in all four dimensions, leading to better performance, growth, innovation, and organizational learning (Denison, 1990). It offers a structure for organizations to evaluate their cultural strengths and weaknesses and identifying areas that require improvement. The four dimensions investigated include mission, adaptability, consistency, and involvement.

Effectiveness of project leadership depends on various factors such as the project's nature, team composition, organizational culture, and individual preferences. Effective leaders often employ a range of leadership styles and techniques based on the specific needs and circumstances of their projects and team members. The four main leadership behaviours that have been identified with project delivery are transformational leadership (Grill et al., 2019; Keegan, Den Hartog, 2004), transactional leadership (Aga, 2016; Grill et al., 2019), path-goal (P-G) leadership (Umuteme, 2024; Umuteme, Adegbite, 2022) and authentic leadership (Lau, 2017; Lloyd-Walker, Walker, 2011; Toor, Ofori, 2008). However, we have adopted the path-goal leadership behaviour because of the advantages it offers in clarifying the path to achieving the common goals and providing support to project team members. Path-goal leadership is believed to improve the psychological

well-being of team members due to the leader's motivating influence, which drives team members towards achieving high performance and experiencing overall job satisfaction (Umuteme, Adegbite, 2022). The four dimensions of P-G leadership theory investigated include directive, achievement-oriented, supportive, and participative leadership styles.

A team is comprised of individuals who come together to collaborate and work towards a common goal or objective (Katzenbach, Smith, 1993; Katzenbach, Smith, 2001). Team-centered working refers to the practice of organizing work and tasks in a collaborative manner, where employees work together as a team rather than in isolated functions. Thus, organizations can unlock the collective potential of their employees and achieve greater success in today's dynamic project environment by harnessing diverse skills, encouraging ownership and accountability, facilitating continuous learning, building stronger team-bond relationships, adaptation to complex project challenges, and promoting a project team culture of continuous empowerment. Teams are specifically tailored to meet the requirements of the organization, which means they are designed with consideration for factors such as the duration of the team's existence, the flexibility of replacing team members, and a variety of tasks and roles that the team undertakes (Torrington et al., 2005).

Effective project teams require a project leader who is strong and has a clear focus, along with the ability to share leadership responsibilities by delegating tasks when necessary (Atesmen, 2015; Kloppenborg, 2015). Thus, high performing teams are characterized by the harmonious integration of the viewpoints of individual team members, encouraging group dynamics, and organizational support. Several models of team effectiveness exist, but we have adopted the Hackman's model and the related project measurable variables in our paper. The variables of the team effectiveness theory adopted include productive output, which emphasizes stakeholders' satisfaction; socializing process, which enables team members to enhance their competencies; and group experience, which enables individual members to learn through the sharing of knowledge in the team.

The purpose of this paper is to identify the order in which the dimensions of cross-culture, organizational culture, path-goal leadership, and team effectiveness influences the project environment. This type of study can offer valuable insights to project leaders regarding the dynamics of the project and provide guidance on enhancing performance. Furthermore, the outcome of this study can enable project leaders to navigate the broader organizational environment and align the project with organizational goals, ultimately leading to improved project outcomes. The business landscape of study is the Nigerian oil and gas industry. The oil and gas industry consists of three sectors: upstream, midstream, and downstream. These viable economic sectors determine how organizations in the supply chain framework operate (Herkenhoff, 2018). In Nigeria, the oil and gas industry is a thriving multimillion-dollar sector with significant oil and gas reserves. The project environment is defined in this paper as the reflective loadings of the dimensions of cross-culture, P-G leadership and team effectiveness. Consequently, the specific objectives of this paper include:

i. To examine the role of path-goal leadership in enhancing project performance in the Nigerian oil and gas industry. This objective aims to assess how different leadership styles and behaviours of the P-G leadership theory influence project outcomes within the Nigerian oil and gas industry. By understanding the impact of P-G leadership on motivating and guiding project teams, project leaders can adopt effective leadership practices that align with the project goals and enhance performance.

ii. To explore the influence of organizational culture on team effectiveness in the Nigerian oil and gas industry. It seeks to investigate how the prevailing organizational culture affects team effectiveness. By identifying the key aspects of organizational culture that contribute to high team effectiveness, project leaders can leverage this knowledge to shape a culture that promotes collaboration, innovation, and overall project success.
iii. To analyze the influence of cross-cultural dimensions on the project environment in the Nigerian oil and gas industry from the perspective of participative leadership.
iv. To assess the alignment between project goals and broader organizational goals in the Nigerian oil and gas industry. It focuses on understanding how well projects within the Nigerian oil and gas industry align with the strategic objectives of the organizations they belong to. By evaluating the extent of adaptation, project leaders can identify areas of potential improvement and make specific adjustments to ensure that the project's objectives are consistent with the broader organizational goals.
v. To rank the dimensions in terms of their loadings, hence providing explanation on the variables influencing the dynamics of the project environment.

This paper is structured as follows: the literature review focuses on prior theoretical and empirical studies to explore the connection between theory and practice. The third section provides background information on the study and describes the methodology employed. The analysis and findings of the research are then presented, followed by discussions and implications of the results. The paper concludes by summarizing the key points and, offering recommendations future research directions, and acknowledging any limitations.

2. LITERATURE REVIEW

The purpose of the literature review in this paper is to evaluate the current understanding of the connection between the four concepts examined, and they individually or collectively influence the dynamics of a project environment. It explores previous empirical studies and how they are connected to the research topics under consideration. We provide a working definition of a project environment as the specific context or setting in which a project takes place. It encompasses various elements, such as the project space, the people involved, and the interactions among different measured variables considered in this paper. In this context, the project environment involves the interplay and coexistence of cross-culture, leadership, organizational culture, and team effectiveness with the aim of enhancing project delivery (Umuteme, 2024).

The presence of cross-cultural diversity in the workplace can have positive effects on job satisfaction, employee motivation, and team effectiveness (Forsyth, 2007; Forsyth, 2010; Salas et al., 2015). This suggests that the presence of cross-cultural dimensions can drive performance and improve the overall effectiveness of teams. Other researchers also agree that cross-cultural dimensions have an impact on team effectiveness (Bitsani, 2013; Dorfman et al., 2012; Hofstede, 2011). Therefore, it is essential to examine the relationship between cross-cultural dimensions prevalent in projects and team effectiveness in the Nigerian oil and gas industry. The literature suggests that leadership plays a significant role in enhancing team performance by monitoring and taking action based on team performance (Northouse, 2019). Also, the need to enhance team performance through the integration of both directive and supportive leadership has been advocated in literature (Blanchard et al., 1993, 2013). Additionally, cross-cultural factors can influence the

leadership style adopted. Again, Dorfman et al. (2012) support this idea by stating that cross-cultural challenges can be mitigated if leadership promotes integration and collaboration within the team.

Organizational culture, which encompasses learned beliefs and norms, also plays a vital role in furthering integration and adaptive collaboration among the workforce. It is important to note that culture is dynamic (Hall, 1989), and transferring cultural norms from one project to another, even within the same organization, is not feasible. Cultural assumptions, such as artefacts and symbols, can impact the work environment within an organization (Schein, 2010) and are expected to create a conducive atmosphere for teamwork to flourish. Mumford et al. (2000) suggest that a key responsibility of a leader is to inspire the team to stay committed to fulfilling the mission of the organization. However, as a gap, Mumford et al. did not specify which leadership approach is most effective in driving an organization's "mission". This demands effective leadership, team engagement, and commitment as essential drivers of project success. Earlier, Blake and Mouton (1981) demonstrated that the connection between involvement and the commitment to productivity, which is achievement-oriented leadership, serves as the driving force for accomplishing organizational goals.

The gap in the literature is the absence of a study that combined the above dimensions of the four concepts in explaining the dynamics of the project environment. This study addresses the gap by identifying the leadership strategies best suited to align team commitment with organizational objectives. Figure 1., below illustrates the conceptual/research models that were examined in this study.

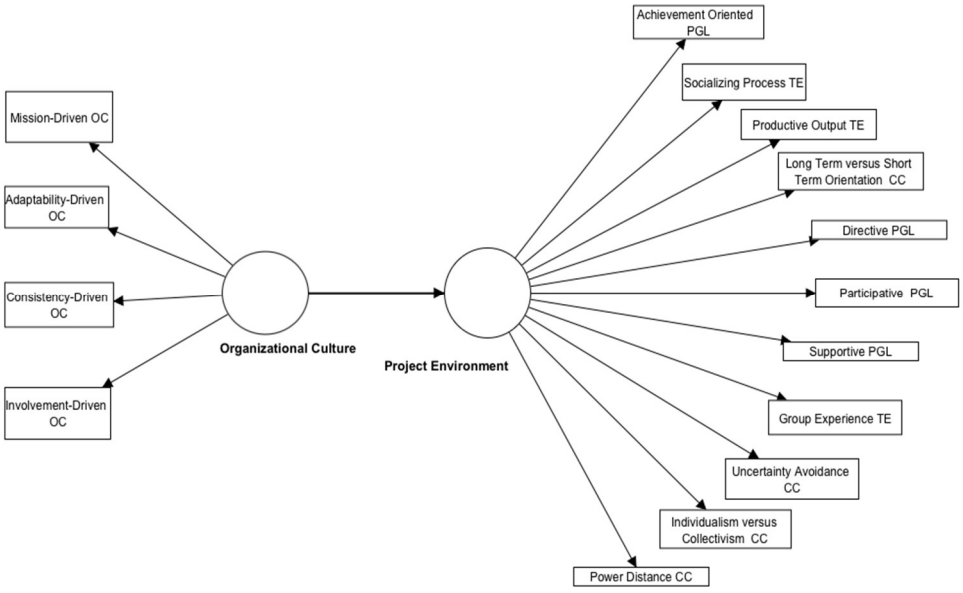

Figure 1. Conceptual/Research Model

Source: Authors' own work.

3. MATERIAL AND METHOD

3.1. Population, Sample, and Instrument

The composition of the study population varies due to the need of changing project team members during the project lifetime. However, in the oil and gas industry, project teams typically consist of 100 or fewer members (Alladi, Iyyunni, 2015; Umuteme, Adegbite, 2023). For this study, a statistical analysis method called structural equation modelling (SEM) is employed, and the sample size is determined according to SEM guidelines. The model under investigation includes 15 variables that are measured. Thus, following the recommendation in the literature (Barclay et al., 1995) to employ a sample size ten (10) times the number of variables, a minimum of 150 participants is required. However, the study recruited 210 participants because of the specific requirement for a minimum of 200 participants for CB-SEM, achieving a 100% response rate for the survey instrument. The sample size of 202 is determined using G*Power software (Faul et al., 2007) to minimize Type-I error with an alpha level of 0.05 and ensure a research power of 80% for exploratory studies, as suggested by the literature (Cohen, 1988). The sampling procedure utilized a cross-sectional approach with a judgmental sampling method (Sekaran, Bougie, 2016), selecting only those team members who possessed the necessary information.

A structured survey questionnaire utilizing a 5-point Likert scale was created for data collection purposes and physically distributed to project team members within specific project teams located in the eastern region of Nigeria. The study sample consists of participants from project teams affiliated with four international oil and gas organizations operating in Nigeria. However, to maintain confidentiality as agreed upon during the survey, the specific project identities are not disclosed. The survey questions were designed based on the operational definitions of the measured variables for each construct, as inferred in the study (Umuteme, 2024). As an illustration, the survey included the following sample questions to assess the team's attitude towards the presence of cross-cultural variables:

i. Inequality permeates throughout the entire leadership hierarchy.
ii. There is the need for clearly defining the roles and structure within the team during the duration of the project.
iii. There is a strong inclination of team members towards adaptability and acceptance of change during the duration of the project.

Each question is accompanied by a 5-point Likert scale, with the following measurement options: (1) Never, (2) Rarely, (3) Sometimes, (4) Usually, (5) Always.

3.2. Data Analysis

In this study, Structural Equation Modelling (SEM) was employed for data analysis to enhance the understanding of the relationships among the variables in the project environment. Both the partial least squares (PLS) SEM and covariance-based SEM modelling approaches were utilized to compare the outcomes of their simulations, as suggested in the literature (Hair et al., 2017). The covariance-based modelling approach serves as an alternative to PLS SEM. However, in this study, which focuses on models consisting solely of reflective factors, the covariance-based SEM approach is considered most suitable (Sarstedt et al., 2016). It is important to note that the objective of this study is not to generalize the results, but rather to provide insight into the existing

relationships that can further contribute to understanding project performance audit outcomes. It should be acknowledged that these results may vary from one project to another.

The simulations in this study were conducted using SmartPLS® software version 4. Initially, the raw data was entered into SPSS and screened to identify any outliers. Subsequently, each construct was developed in the SmartPLS® software, with the measured variables serving as indicators. To determine the path coefficients and statistical significance level, a bootstrapping simulation was performed with 1000 subsamples. The reliability and validity checks followed the procedures outlined in relevant literature (Hair et al., 2019; Henseler et al., 2015; Ringle, Sarstedt, 2016; Sarstedt et al., 2020).

Model fit was achieved using the Standardized Root Mean Square Residual (SRMR). The SRMR is a measure of fit that provides an absolute assessment. It represents the average discrepancy between the observed correlation and the correlation predicted by the model. Since the SRMR is an absolute measure, a value of zero indicates a perfect fit. We employed the maximum likelihood (ML) approach recommended in the literature (Hu, Bentler, 1999) in order to determine a relatively good fit between the hypothesized model and the observed data. The ML-based SRMR is particularly sensitive to models that have inaccurately specified factor covariances or latent structures. At the same time, the RMSEA (Root Mean Square Error of Approximation) is the most sensitive index when it comes to models that have inaccurately specified factor loadings.

The findings in the literature (Hu & Bentler, 1999) indicate that using a combination of cut-off values from specific ranges for the ML-based SRMR and an additional fit index (such as RMSEA) may yield better results compared to using a single-index presentation strategy. Additionally, the findings show that the use of combinational rules with RMSEA > 0.06 and SRMR > 0.09 (or 0.10) led to the lowest overall sums of Type I and Type II error rates, making them more favourable for evaluating the model. The software did not calculate RMSEA for PLS-SEM due to its limitations and incompatibility with the PLS-SEM approach. PLS-SEM is a variance-based method that aims to estimate relationships between latent variables and explain variance in dependent variables. Unlike covariance-based SEM, PLS-SEM does not assume any specific distribution for observed variables and does not estimate covariance matrices. Instead, it prioritizes the predictive nature of the model.

In this study, PLS-SEM achieved an SRMR of 0.09, while CB-SEM achieved an SRMR of 0.068 and RMSEA of 0.064. The results indicate that the simulations fulfilled the criteria specified for SRMR and RMSEA mentioned earlier, indicating a successful attainment of a good fit. We evaluated the coherence within the constructs by employing the composite reliability measure, as it is more suitable for the study objective. Unlike Cronbach alpha, which assumes equal reliability of all indicators, our model acknowledges that loadings for each measured variable can vary across different projects. The aim of the study is not to achieve generalizability, but to prioritize and rank the project environment's impact on each operational variable. In exploratory research such as this, composite reliability values between 0.60 and 0.70 are considered acceptable, while in more advanced stages of research, values ranging from 0.70 to 0.90 are deemed satisfactory (Hair et al., 2011; Nunnally, Bernstein, 1994). Similarly, the model simulation results indicate that PLS-SEM (0.70) and CB-SEM (0.8) achieved a composite reliability >=0.70 for both constructs.

An additional metric used to compare the predictability of both PLS-SEM and CB-SEM was the R-Squared value, also known as the coefficient of determination. R-squared is a statistical measure that represents the proportion of the variance in the dependent variable (the outcome or response variable) that is explained by the independent variables (predictor or explanatory variables) in a regression model. The *p*-values are compared with the research alpha level of 0.05 to determine statistical significance. The results of the SEM simulations are presented next.

4. RESULTS

4.1. Participants Profile

This research attained an impressive response rate of 100% with a sample size of 202 participants. The distribution of age groups is as follows: 30–35 years (26.7%), 36–40 years (50.0%), 41–45 years (6.0%), 46–50 years (11.9%), and above 50 years (5.4%). Out of the total, there are 29 females (14.4%) and 173 males (85.6%). According to the data, 194 participants (96.0%) hold bachelor's degrees or higher national diplomas. All participants are Nigerian citizens.

4.2. Descriptive Statistics

The results suggest that the responses range from sometimes to usually, with participative leadership having the highest mean value of 4.52 ±0.63. This underscores the importance of a participative leadership approach in projects. However, under the causal effect of organizational culture using SEM, the study will investigate if participative leadership is still the top-ranking leadership behaviour. For the two bi-polar variables, including individualism/collectivism and long-term/short-term orientation, the outcome favoured collectivism and long-term orientation, respectively. From the mean values in Table 1, the five top-ranking operational variables in the project environment from the mean in descending order include Participative leadership (4.52±0.63), Achievement-oriented leadership (4.20±0.73), Mission (4.10±0.78); Supportive leadership (4.03±0.69) and Group experience (3.97±0.90). Hence, from the standard deviation ranges, we can notice that the results for these five variables are within 3 to 5. The top-rating variables are dimensions of leadership, organizational culture, and team effectiveness. This suggests that cross-culture have minimal control of the project environment. Hence, there is a need to investigate the influence of the principle of adaptation and the likely effects as we discuss the results further.

Table 1. Mean and Standard Deviation of Measured Variables

	Power Distance CC	Uncer-tainty Avoi-dance CC	Indivi-dualism versus Collec-tivism CC	Long Term versus Short Term Orienta-tion CC	Direc-tive PGL	Suppor-tive PGL	Partici-pative PGL	Achieve-ment Oriented PGL	Produc-tive Output TE	Sociali-zing Process TE	Group Expe-rience TE	Mission -Driven OC	Adapta-bility-Driven OC	Involve-ment-Driven OC	Consis-tency-Driven OC
Valid	202	202	202	202	202	202	202	202	202	202	202	202	202	202	202
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean	3.80	3.75	3.04	3.79	3.71	4.03	4.52	4.20	3.79	3.09	3.97	4.10	3.71	3.57	3.94
Std. De-viation	0.97	1.12	1.02	0.80	0.81	0.69	0.63	0.73	0.86	0.75	0.90	0.78	0.86	0.96	0.90

Sources: Researcher's Field Survey.

4.3. Correlation Analysis

Correlation analysis enables the estimation of the population correlation and tests the null hypothesis that the population correlation between variable pairs is zero. This analysis examines all potential combinations of the measured variables within a 95% confidence interval (CI). The Pearson's rho correlation coefficient was adopted based on the assumptions that the measured bivariate relationships are linear. The *p-values* corresponding to each pairwise relationship was displayed. Significant correlations are denoted as follows: *p < 0.05 if the correlation is significant at a significance level of alpha = 0.05; **p <0.01 if the correlation is significant at a significance level of alpha = 0.01; and ***p < 0.001 if the correlation is significant at a significance level of alpha = 0.001. Table 1, present the correlation matrix for all measured variables.

The results suggest that the correlational relationship between all the dimensions of leadership and organizational culture are significant. Cross-culture had no significant relationship with any other measured variables except between power distance and individualism/collectivism. From the correlation table (Table 2), the highest rating correlational Pearson coefficients are presented as follows:

i. Achievement-oriented dimension of P-G leadership were significantly correlated with the dimensions of team effectiveness and organizational culture at $p<0.001$, and with three dimensions of cross-culture at $p<0.05$, except power distance. However, the correlation with individualism/collectivism was negative. Since the question relating to this measure tended towards collectivism, there is the tendency of an individualist's behaviour favouring achievement-oriented leadership in projects. This can refer to expert and highly specialized roles within the team. Power distance is positively and significantly correlated with only collectivism, which is understood because the presence of large power distance encourages team bonding through interdependent task-driven association among team members.
ii. Participative leadership was positively and significantly correlated with only the uncertainty avoidance dimension of cross-culture and mission-driven organizational culture at $p<0.001$ and socializing process of team effectiveness and involvement-driven organizational culture at $p<0.01$.
iii. Supportive leadership was positively and significantly correlated with long-term orientation cross-culture, productive output of team effectiveness, and adaptability-driven organizational culture at $p<0.01$.
iv. Directive leadership was positively and significantly correlated with long-term orientation cross-culture, socializing process of team effectiveness, and mission-driven, adaptability-driven and consistency-driven organizational culture at $p<0.01$, and involvement-driven organizational culture at $p<0.05$.
v. All the measured dimensions of organisational culture positively correlated with long-term/short-term orientation CC, directive PGL, achievement-oriented PGL, and socializing effectiveness TE. Suggesting that these are the controlling variables of the project environment in the oil and gas industry.
vi. Supportive leadership was positively and significantly correlated with long-term orientation cross-culture, productive output of team effectiveness, and adaptability-driven organizational culture at $p<0.01$.

Table 2. Correlation among Measured Variables

Variable	Power Distance CC	Uncer-tainty Avoidan-ce CC	Individu-alism versus Collecti-vism CC	Long Term versus Short Term Orientation CC	Directive PGL	Suppor-tive PGL	Partici-pative PGL	Achie-vement Oriented PGL	Produc-tive Output TE	Sociali-zing Process TE	Group Expe-rience TE	Mission-Driven OC	Adaptabi-lity-Dri-ven OC	Involv-ement--Driven OC	Consis-tency--Driven OC
1. Power Distance CC	—														
2. Uncertainty Avoidance CC	0.11	—													
3. Individua-lism versus Collecti-vism CC	0.33 ***	0.07	—												
4. Long Term versus Short Term Orientation CC	-0.11	0.02	-0.17 *	—											
5. Directive PGL	0.04	0.11	0.08	0.24 ***	—										
6. Supportive PGL	-0.12	0.13	0.02	0.20 **	0.07	—									
7. Partici-pative PGL	-0.08	0.25 ***	-0.09	0.06	0.17 *	0.19 **	—								
8. Achieve-ment Oriented PGL	-0.06	0.16 *	-0.16 *	0.15 *	0.29 ***	0.06	0.18 *	—							

Table 2 (cont.). Correlation among Measured Variables

Variable	Power Distance CC		Uncer-tainty Avoidan-ce CC		Individu-alism versus Collecti-vism CC		Long Term versus Short Term Orientation CC		Directive PGL		Suppor-tive PGL		Partici-pative PGL		Achie-vement Oriented PGL		Produc-tive Output TE		Socializ-ing Process TE		Group Expe-rience TE		Mission-Driven OC		Adaptabi-lity-Dri-ven OC		Involv-ement--Driven OC		Consis-tency--Driven OC	
9. Productive Output TE	-0.13		-0.02		-0.17	*	0.23	***	0.11		0.19	**	0.07		0.41	***	—													
10. Socializing Process TE	-0.10		0.18	**	-0.07		0.24	***	0.27	***	0.11		0.19	**	0.27	***	0.28	***	—											
11. Group Experience TE	0.01		0.04		-0.03		0.12		0.10		0.01		-0.04		0.24	***	0.17	*	0.14		—									
12. Mission--Driven OC	-0.09		0.14	*	-0.12		0.27	***	0.28	***	0.08		0.25	***	0.30	***	0.10		0.33	***	0.00		—							
13. Adaptabi-lity-Driven OC	0.03		0.10		-0.12		0.35	***	0.27	***	0.18	**	0.12		0.25	***	0.23	**	0.39	***	0.12		0.45	***	—					
14. Involvement--Driven OC	-0.09		0.05		-0.21	**	0.26	***	0.17	*	0.12		0.20	**	0.25	***	0.35	***	0.28	***	0.08		0.37	***	0.31	***	—			
15. Consistency--Driven OC	-0.08		0.06		-0.11		0.21	**	0.32	***	0.04		0.12		0.36	***	0.28	***	0.27	***	0.19	**	0.37	***	0.30	***	0.40	***	—	

* $p < .05$, ** $p < .01$, *** $p < .001$

Source: Researcher's Field Survey.

vii. Directive leadership was positively and significantly correlated with long-term orientation cross-culture, socializing process of team effectiveness, and mission-driven, adaptability-driven and consistency-driven organizational culture at $p<0.01$, and involvement-driven organizational culture at $p<0.05$.

viii. All the measured dimensions of organisational culture positively correlated with long-term/short-term orientation CC, directive PGL, achievement-oriented PGL, and socializing effectiveness TE. Suggesting that these are the controlling variables of the project environment in the oil and gas industry.

4.4. Structural Equation Modelling

The data analysis in this study utilized SmartPLS®, a software for structural equation modelling (SEM) analysis, as described in the literature (Ringle, Sarstedt, 2016). The significance of outer loadings and path coefficients is indicated by the p-values, shown in brackets, with values equal to or less than 0.05 considered significant. In instances where two opposing concepts are measured as a single entity, loadings above 0.5 indicate a preference towards the first concept and vice versa. To determine the level of certainty, outer loadings exceeding 0.5 suggest a high degree of certainty towards the measured variable and vice versa. Reflective formulations treat the loadings for each dimension as distinct entities, following the approach outlined in the literature (Kline, 2012). Consequently, the measured dimensions of P-G leadership, cross-culture, and team effectiveness are considered unique as they reflect variables of the project environment. Also, the dimensions of organizational culture are reflective and collectively contribute to the causal regression effect on the project environment. Simulation results for PLS-SEM (Figure 2.) and CB-SEM Figure 3.) are provided below.

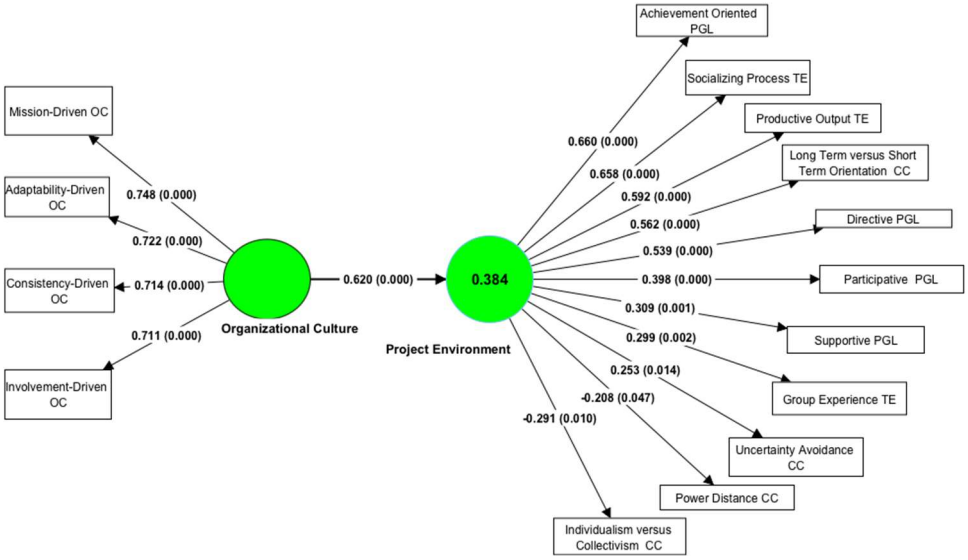

Figure 2. Simulation Results for PLS-SEM: The value in the bracket is the p-value

Source: Authors' own work.

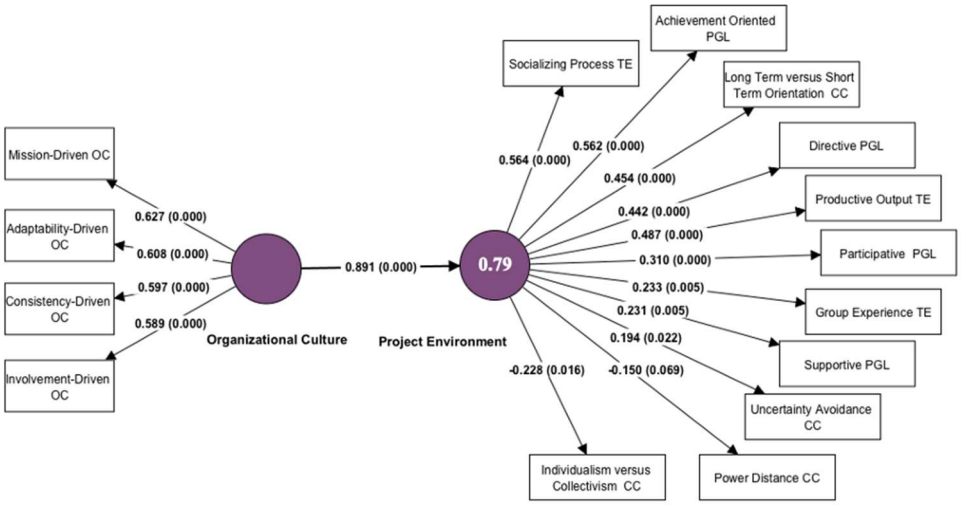

Figure 3. Simulation Results for CB-SEM: The values in brackets are the p-value

Source: Authors' own work.

PLS-SEM achieved a coefficient of determination of 38.4%, and 79% for CB-SEM. The higher coefficient of determination in CB-SEM suggests that the relationships between variables were better captured by the model, because it is more suited for models with reflective constructs, where the observed indicators are assumed to be a reflection of the latent construct. Hence, more appropriate when the goal is to estimate precise relationships between latent constructs. The outcomes of the ranking are presented in Tables 3–6 and explained in the next section.

Table 3. PLS-SEM Ranking of the Dimensions of Organisational Culture

Ranking (Ascending Order)	Determinants of Organizational Culture in a Project Environment: PLS-SEM Simulation	Path Coefficient	Significance (p-value)
1	Mission-Driven OC	0.748	0.000
2	Adaptability-Driven OC	0.722	0.000
3	Consistency-Driven OC	0.714	0.000
4	Involvement-Driven OC	0.711	0.000

Source: Researcher's Field Survey.

Table 4. PLS-SEM Ranking of Project Environment Variables

Ranking (Ascending Order)	Determinants of Project Environment: PLS-SEM Simulation	Path Coefficient	Significance (p-value)
1	Achievement Oriented PGL	0.660	0.000
2	Socializing Process TE	0.658	0.000
3	Productive Output TE	0.592	0.000
4	Long Term versus Short Term Orientation CC	0.539	0.000

Table 4 (cont.). PLS-SEM Ranking of Project Environment Variables

Ranking (Ascending Order)	Determinants of Project Environment: PLS-SEM Simulation	Path Coefficient	Significance (p-value)
5	Directive PGL	0.562	0.000
6	Participative PGL	0.398	0.000
7	Supportive PGL	0.309	0.001
8	Group Experience TE	0.299	0.002
9	Uncertainty Avoidance CC	0.253	0.014
10	Power Distance CC	-0.208	0.047
11	Individualism versus Collectivism CC	-0.291	0.010

Source: Researcher's Field Survey.

Table 5. CB-SEM Ranking of the Dimensions of Organisational Culture

Ranking (Ascending Order)	Determinants of Organizational Culture in a Project Environment: CB-SEM Simulation	Path Coefficient	Significance (p-value)
1	Mission-Driven OC	0.627	0.000
2	Adaptability-Driven OC	0.608	0.000
3	Consistency-Driven OC	0.597	0.000
4	Involvement-Driven OC	0.589	0.000

Source: Researcher's Field Survey.

4.5. Comparison of Simulation Results: PLS-SEM vs. CB-SEM

Both PLS-SEM (**Table 3**.) and CB-SEM (**Table 5**.) outcomes for the predictor latent variable highlight the importance of Mission-Driven, Adaptability-Driven, Consistency-Driven, and Involvement-Driven aspects in shaping Organizational Culture. However, PLS-SEM suggests stronger relationships compared to CB-SEM. The choice between these methods can depend on the specific research context and the nature of the data, with CB-SEM generally preferred for its precision and PLS-SEM for its flexibility in handling complex models and less stringent data assumptions.

The path coefficients in PLS-SEM are generally higher than those in CB-SEM for all four dimensions of Organizational Culture. For example, the path coefficient for Mission-Driven OC is 0.748 in PLS-SEM compared to 0.627 in CB-SEM. Both methodologies agree on the ranking of the path coefficients, with Mission-Driven OC being the highest, followed by Adaptability-Driven OC, Consistency-Driven OC, and Involvement-Driven OC. However, the magnitude of these coefficients differs, with PLS-SEM showing stronger relationships. In both outcomes, all p-values are 0.000, indicating that all path coefficients are statistically significant at the adopted conventional levels.

The findings from Structural Equation Modelling (SEM) analyses, specifically using Partial Least Squares SEM (PLS-SEM) and Covariance-Based SEM (CB-SEM), to assess the influences on the Project Environment. In the PLS-SEM analysis (Table 4.), the strongest positive influences on the Project Environment are attributed to Achievement Oriented PGL (0.660) and Socializing Process TE (0.658), followed closely by Productive Output TE (0.592), Directive PGL (0.562), and Long Term versus Short Term Orientation CC (0.539). Moderate positive influences are found for Participative PGL (0.398),

Supportive PGL (0.309), and Group Experience TE (0.253). Negative influences are noted from Individualism versus Collectivism CC (-0.291) and Power Distance CC (-0.208). Additionally, Organizational Culture has a significant positive impact on the Project Environment with a path coefficient of 0.620 (0.000).

In contrast, the CB-SEM analysis (Table 6.) highlightss that the strongest positive influences from the Project Environment are on Socializing Process TE (0.564) and Achievement Oriented PGL (0.562). These are followed by Productive Output TE (0.487), Long Term versus Short Term Orientation CC (0.454), and Directive PGL (0.442). Participative PGL shows a moderate influence with a path coefficient of 0.310, while Group Experience TE and Supportive PGL have coefficients of 0.233 and 0.231, respectively. Uncertainty Avoidance CC is also influenced with a path coefficient of 0.194. The strongest negative influence is from Individualism versus Collectivism CC (-0.228), followed by Power Distance CC (-0.150). Notably, CB-SEM indicates that Organizational Culture has a much stronger influence on the Project Environment with a path coefficient of 0.891.

Table 6. CB-SEM Ranking of Project Environment Variables

Ranking (Ascending Order)	Determinants of Project Environment: CB-SEM Simulation	Path Coefficient	Significance (p-value)
1	Socializing Process TE	0.564	0.000
2	Achievement Oriented PGL	0.562	0.000
3	Productive Output TE	0.487	0.000
4	Long Term versus Short Term Orientation CC	0.454	0.000
5	Directive PGL	0.442	0.000
6	Participative PGL	0.310	0.000
7	Group Experience TE	0.233	0.005
8	Supportive PGL	0.231	0.005
9	Uncertainty Avoidance CC	0.194	0.022
10	Power Distance CC	-0.150	0.069
11	Individualism versus Collectivism CC	-0.228	0.016

Source: Researcher's Field Survey.

While both SEM approaches identify similar influential factors on the Project Environment, CB-SEM reports generally higher path coefficients, especially highlighting the stronger impact of Organizational Culture compared to PLS-SEM. The methodological differences between the two approaches contribute to these variations. PLS-SEM focuses on maximizing explained variance in endogenous constructs using latent variables and is less stringent about data distribution assumptions. In contrast, CB-SEM assumes multivariate normality and typically provides more precise estimates for large sample sizes. Consequently, CB-SEM emphasizes a stronger influence of organizational culture on the project environment.

Despite these differences, both methods have offered valuable insights into the relationships between various determining dimensions of cross-culture, team effectiveness and path-goal leadership and the Project Environment, providing important implications for organizational management and strategy. Earlier, the project controlling variables when

all the dimensions of organisational culture were correlated with the project environment variables adopted in the study were long-term/short-term orientation CC, directive PGL, achievement-oriented PGL, and socializing effectiveness TE. However, the analysis from the SEM productive output TE increased the controlling project environment variables to five. The addition of productive output TE underscores the significance of productivity to project success.

5. DISCUSSION

Since the normality of the data and the covariance among the measured variables cannot be ascertained, PLS-SEM results are adopted for the discussion on SEM in this section. The discussion will provide the general outlook of the correlations, and followed by the PLS-SEM outcomes. To enhance project success in the oil and gas industry, a detailed discussion of the relationship between leadership dimensions, organizational culture, and cross-cultural factors is essential.

Achievement-oriented leadership significantly correlates with team effectiveness and organizational culture. This suggests that leaders who focus on setting challenging goals and achieving high-performance standards can promote a culture that enhances team effectiveness and overall project success. This dimension is particularly relevant in expert and highly specialized roles within the team, where individual achievements contribute significantly to project outcomes. Literature evidence suggests that business objectives and goals are achieved by integrating diverse expertise (Kozlowski et al., 2016; Kozlowski, Ilgen, 2006). The current study has provided further insight into the dimensions of leadership, organizational culture and team effectiveness, which was relatively lacking in previous studies.

Also, participative leadership, which involves including team members in decision-making processes, strongly correlates with uncertainty avoidance in cross-cultural settings and mission-driven organizational culture. This implies that involving team members in decision-making can reduce uncertainty and create a strong sense of mission, which is needed to drive project success. The participative leadership approach also correlates with socializing processes within the team and an involvement-driven organizational culture, emphasizing the importance of inclusive leadership in enhancing team cohesion and involvement. These findings resonate with the definition of leadership provided in the literature (Blake, Mouton, 1981), where the authors established that the relationship between involvement and commitment to productivity (achievement-driven) provides the necessary force for achieving organizational goals.

Supportive leadership, characterized by leaders who show concern for their team members' well-being and provide support, is positively correlated with long-term orientation in cross-culture and productive output in team effectiveness. It also aligns with an adaptability-driven organizational culture. This indicates that supportive leaders can promote long-term commitment and adaptability, which are essential for maintaining high productivity and achieving project goals in the dynamic oil and gas industry. However, this leadership approach is relatively absent on projects in the Nigerian oil and gas industry, rather support is provided within the team through a socializing process (Umuteme, 2024; Umuteme, Adegbite, 2023).

Directive leadership, where leaders provide clear instructions and closely supervise team activities, correlates positively with long-term orientation in cross-culture, socializing process of team effectiveness, and the dimensions of organizational culture (mission-

driven, adaptability-driven, and consistency-driven). Thus, the findings of the current study corroborate the position advocated in the literature (Blanchard et al., 1993, 2013), of the need to integrate supportive and directive leadership for enhanced productivity. This suggests that directive leadership can enhance social cohesion and ensure alignment with the organization's mission and adaptability, which are vital for navigating the complex and often unpredictable nature of oil and gas projects. Again, in supporting the position reiterated in the literature (Mumford et al., 2000), of the need for the leadership to encourage the team in driving the mission of the organization, the current study shows a positive Pearson's correlation between mission and the leadership dimensions studied in the following order: *Directive leadership (0.27)-> Achievement-oriented (0.25)->Supportive (0.18)->Participative->(0.12)*. Whereas Mumford et al. did not indicate which leadership approach is most appropriate in driving the "Mission" of the organization, this study has closed this gap.

Furthermore, the analysis indicates that power distance is positively correlated with collectivism. This relationship suggests that in cultures with high power distance, there is a tendency for team members to work interdependently, which can strengthen team bonds and improve project outcomes. This indication provides a soothing solution to the problem of the leadership in a large power distance work culture assuming the role of *decision-maker, mentor, expert, and facilitator,* identified in the literature (Miroshnik, 2013), and the master-servant approach suggested elsewhere (Oruh, Dibia, 2020). Conversely, individualism negatively correlates with achievement-oriented leadership, thus highlighting potential challenges in integrating individualistic behaviours within a collectivist-oriented team structure. The novel understanding from this study is essential for project managers to navigate cultural dynamics effectively. Long-term orientation is significantly correlated with several dimensions of organizational culture and leadership styles (directive, achievement-oriented, and supportive). This highlights the importance of advancing a long-term perspective within the team, which can drive consistent and adaptive behaviours essential for sustained project success in the oil and gas sector.

Both Partial Least Squares Structural Equation Modelling (PLS-SEM) and Covariance-Based Structural Equation Modelling (CB-SEM) provide insights into the relationships between leadership, organizational culture, and project environment. However, PLS-SEM tends to show stronger path coefficients, indicating more robust relationships between these variables. For instance, PLS-SEM reveals stronger positive influences of achievement-oriented leadership and socializing processes on the project environment compared to CB-SEM. The PLS-SEM analysis identifies the five strongest positive influences on the project environment in the following order: *Achievement-Oriented Leadership (PGL)->Socializing Process (TE)->Productive Output (TE)->Directive Leadership (PGL)->Long-Term vs. Short-Term Orientation (CC)*. This study suggests that these critical factors provide a project environment that is conducive to project success in the oil and gas industry. Notably, organizational culture itself has a significant positive impact on the project environment, underscoring the importance of cultivating a supportive and mission-driven culture.

6. FULFILLING THE OBJECTIVES OF THE STUDY

To align the fulfillment of the objectives with the outcomes of the study, we assess how the findings support each objective as follows:

Objective 1 *– To examine the role of path-goal leadership in enhancing project performance in the Nigerian oil and gas industry by assessing how different leadership styles and behaviours influence project outcomes*: The outcome of the study suggests that (1) Achievement-oriented dimension of P-G leadership significantly correlated with team effectiveness and organizational culture, suggesting that this leadership style enhances project performance; (2) Directive leadership also showed strong positive influences on the project environment, indicating that certain P-G leadership styles are effective in guiding and motivating project teams towards better performance; and (3) The significant positive impact of Organizational Culture on the Project Environment with a path coefficient of 0.620 reinforces the idea that leadership styles aligned with the organizational culture can enhance project outcomes.

Objective 2 – To *explore the influence of organizational culture on team effectiveness in the Nigerian oil and gas industry*: The study suggests that (1) Organizational culture dimensions positively correlated with socializing process, and productive output aspects of team effectiveness, while group experience was only correlated with consistency-driven OC. Thus, highlighting the critical role of culture in promoting team effectiveness; and (2) The study identified that mission-driven, adaptability-driven, and consistency-driven organizational cultures significantly enhance team effectiveness, aligning with the objective to shape a culture that promotes collaboration and innovation.

Objective 3 *– To analyse the influence of cross-cultural dimensions on the project environment from the perspective of participative leadership*: The results of the study suggest that (1) Participative leadership was positively and significantly correlated with the uncertainty avoidance dimension of cross-culture and mission-driven organizational culture, suggesting that it can effectively manage cross-cultural dynamics in the project environment; and (2) The moderate positive influence of participative leadership on the project environment (0.398) indicates its relevance in cross-cultural contexts within the industry.

Objective 4 *– To assess the alignment between project goals and broader organizational goals in the Nigerian oil and gas industry*: The outcome of the study suggests that (1) The significant positive impact of organizational culture on the project environment suggests that projects aligned with the organization's culture and goals are more successful; and (2) Achievement-oriented and directive P-G leadership styles, which showed strong positive influences on the project environment, can help align project objectives with broader organizational goals, ensuring consistency and strategic alignment.

Objective 5 *– To rank the dimensions in terms of their loadings and explain the variables influencing the project environment dynamics*: The study suggests that (1) The strongest positive influences on the Project Environment were from Achievement-oriented PGL (0.660) and Socializing Process TE (0.658), followed by Productive Output TE (0.592) and Directive PGL (0.562); (2) Organizational culture's significant positive impact on the project environment (0.620) underscores its role as a controlling variable; and (3) Negative influences from Individualism vs. Collectivism (-0.291) and Power Distance (-0.208) highlight areas for potential improvement.

Thus, the synthesis of the findings of this study outcomes shows that the study provide comprehensive support for the objectives, and highlights the importance of leadership styles, organizational culture, and cross-cultural dimensions in enhancing project performance and aligning project goals with broader organizational objectives in the Nigerian oil and gas industry.

7. CONCLUSIONS AND IMPLICATIONS

This study investigates the key dimensions influencing team effectiveness, culture, and leadership in the oil and gas project environment. It focuses on four controlling variables: cross-culture, organizational culture, path-goal leadership, and team effectiveness. Cross-cultural dynamics significantly impact team dynamics, decision-making processes, conflict resolution, and project delivery. Utilizing both PLS-SEM and CB-SEM methodologies provides robust insights into project dynamics, enabling better decision-making and strategic planning. Adopting PLS-SEM for its flexibility in handling complex models and CB-SEM for its precision helps tailor approaches to specific project needs and data contexts. The outcome of this study was analysed using correlation and PLS-SEM. The adoption of PLS-SEM was based on the fact that the normality of the data and covariance among the measured variables could not be ascertained.

In the volatile Nigerian oil and gas business landscape, an adaptability-driven culture can help organizations respond swiftly to regulatory changes, market fluctuations, and operational challenges. Promoting adaptability encourages innovation and flexibility, enabling organizations to leverage new technologies and methodologies. Recognizing the presence of high-power distance and collectivist tendencies is imperative for project success, and project managers should promote a team-oriented work environment where hierarchical structures can support collaboration and collective effort. Clear communication from leaders can bridge power distance gaps, ensuring all team members are informed and engaged. A mission-driven culture cultivates a unified team-centred work-driven purpose and motivates employees to work towards common objectives. This is essential for large-scale projects as obtainable in the industry. Emphasizing long-term goals can drive sustainable practices, essential for environmental stewardship and community relations. Furthermore, a long-term orientation cross-culture can encourage strategic planning and investment.

Given the complex and often hierarchical nature of organizations, directive leadership can ensure clarity in roles and responsibilities, reducing misunderstandings and enhancing efficiency. Directive leadership can enforce strict adherence to safety protocols and regulatory compliance, which is critical in the high-risk oil and gas industry. Emphasizing supportive leadership can improve employee well-being and morale, leading to higher productivity and reduced turnover rates. Building supportive relationships aligns with the long-term orientation prevalent in many Nigerian cultures, furthering loyalty and commitment.

Involving team members in decision-making processes can be particularly effective in Nigeria's diverse cultural landscape. This approach mitigates uncertainty and builds a cohesive, mission-driven team. Participative leadership also enhances engagement with local communities and stakeholders. In the oil and gas sector, leveraging achievement-oriented leadership can drive projects requiring high technical expertise and specialization. Leaders should set clear performance standards and recognize individual contributions to motivate high achievers. Recognizing and rewarding high-performance, organizations can help in retaining top talent, which is important for maintaining a competitive advantage in the industry.

The study outcome implies the need for the following project management strategies to enhance project success in the oil and gas industry:

1. Implementation of leadership development programs for achievement-oriented, participative, supportive, and directive leadership skills.

2. Providing cultural competency training for effective navigation of Nigeria's diverse cultural landscape.
3. Developing stakeholder engagement plans incorporating participative leadership to build trust and support.
4. Integrating long-term sustainability goals into project planning and execution.
5. Establishing innovation hubs to promote adaptability and continuous improvement.
6. Strengthening safety and compliance protocols through directive leadership to ensure adherence to industry standards and regulations.

8. LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

This study has some limitations necessitating the need for further research in the following areas. First, there is a need to research the balance between directive and participative leadership styles. This could involve identifying situations where a blend of both styles is most effective, thereby preventing the dominance of autocratic behaviours while ensuring project objectives are met efficiently. Second, there is a need to conduct longitudinal mixed-method studies to understand the long-term impact of participative and supportive leadership on project success. This could provide insights into how these leadership styles contribute to sustained project performance and organizational growth over time. Third, the emphasis is on developing and validating metrics and key performance indicators (KPIs) to assess the effectiveness of participative and supportive leadership. These metrics could help organizations evaluate and improve their leadership practices systematically

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Petra VAŠANIČOVÁ[1]

CHANGES IN THE TRAVEL AND TOURISM DEVELOMPENT INDEX METHODOLOGY

Measuring indicators of tourism development is crucial for formulating effective tourism policies. The Travel and Tourism Development Index (TTDI) is intrinsically linked to the measurement of tourism development indicators. It provides the essential data and analysis needed for creating effective, sustainable, and competitive tourism policies, thereby maximizing the benefits of tourism while minimizing its adverse impacts. The TTDI has been published twice since its inception in 2021. Notably, the methodology for compiling the TTDI has changed to enhance its accuracy and relevance This paper aims to identify the degree of agreement between the new and the original calculation methodology in the TTDI values achieved by countries. In addition, we show the values achieved concerning the region in which the country is located and concerning the income group. Moreover, we quantify differences in the country's ranking between the original and new rankings within TTDI. The findings indicate that even with the revised methodology for calculating the TTDI, the values attained by the countries exhibit a strong correlation.

Keywords: travel, tourism, development, index, methodology.

1. INTRODUCTION

The travel and tourism industry holds significant importance for many countries worldwide, occupying a central role in their economies due to the substantial revenue it generates.

From an economic and social perspective, the growth of the travel and tourism industry leads to a rising demand for a diverse range of consumer goods and services. This demand stimulates both the manufacturing and service sectors, boosting economic activity and consumption beyond normal market trends. Consequently, the increase in tourism consumption, driven by large seasonal movements of people to popular destinations and a rising number of visitors, benefits the comprehensive development of the economies in these tourist areas and the overall economic landscape of countries investing in their tourism industry (Sofronov, 2018).

Tourism development policies are becoming increasingly vital for both, developing and developed countries. These policies not only bring a new sector into the national economy but also help achieve macroeconomic goals. Consequently, many countries focus their

[1] Petra Vašaničová, University of Prešov, Slovakia; e-mail: petra.vasanicova@unipo.sk. ORCID: 0000-0001-7353-2057.

efforts on attracting foreign tourists to boost their foreign reserves. Tourism helps strengthen connections between nations, fosters understanding among different people and cultures, and contributes to global peace.

Measuring indicators of tourism development is essential for creating well-informed, effective, and sustainable tourism policies that maximize benefits and minimize adverse impacts. The Travel and Tourism Development Index (TTDI) serves as a comprehensive tool for measuring and analyzing the various indicators critical to tourism development. Each pillar of TTDI reflects indicators that help us assess strengths and weaknesses from a relational standpoint to identify opportunities for tourism development through strategies aimed at creating superior competitive advantages. General comments from the experts creating TTDI stimulate future research on tourism development.

Since its inception in 2021, the TTDI has been published twice. Significantly, the methodology for compiling the TTDI has been revised to improve its precision and pertinence. Therefore, this paper aims to identify the degree of agreement between the new and the original calculation methodology in the TTDI values achieved by countries.

2. TRAVEL AND TOURISM DEVELOPMENT INDEX

The tourism phenomenon is inherently complex, having significant social, political, cultural, and economic implications. A country's travel and tourism development should be viewed in a multidimensional context, as it is influenced by various factors that enhance its attractiveness as a tourist destination. Studies that carried out a literature review on tourism development have provided many variables. According to Chim-Miki and Batista-Canino (2018), tourism development indicators can generate collective results for both stakeholders and tourism destinations.

Since 2007, the World Economic Forum has published The Travel and Tourism Competitiveness Report (Blanke, Chiesa, 2007) to facilitate economic comparisons of travel and tourism competitiveness. The Travel and Tourism Competitiveness Index (TTCI) reflects countries' global tourism competitiveness standings, derived from a statistical database and expert evaluations. This report has been issued eight times, providing specific TTCI values for 2007, 2008, 2009, 2011, 2013, 2015, 2017 and 2019. The TTCI was constructed using several indicators that were aggregated into several pillars and then subindexes. The composition of the TTCI has varied over time. Figure 1 shows the names of the TTCI subindexes for 2007–2013 and 2015–2019.

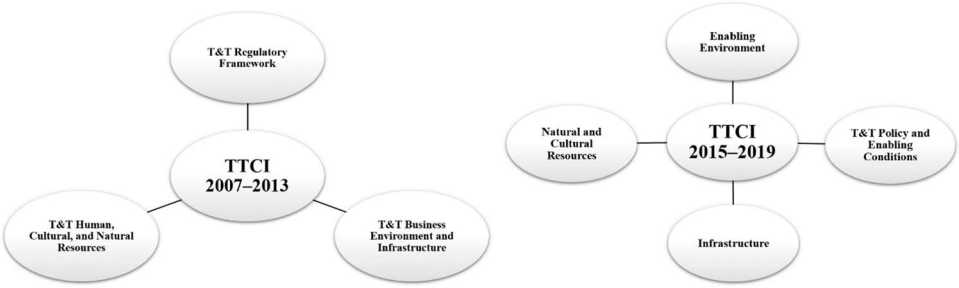

Figure 1. Comparison of the Travel and Tourism Competitiveness Index Frameworks

Source: own processing.

The TTCI has been investigated in various studies, e.g., Croitoru (2011); Wu (2011); Leung, Baloglu (2013); Cîrstea (2014); Assaf, Tsionas (2015); Ivanov, Ivanova (2016); Pulido-Fernández, Rodríguez-Díaz (2016); Dias (2017); Khan et al. (2017); Martín et al. (2017); Radovanov et al. (2020); Vašaničová et al. (2021); Bazargani, Kiliç (2021); Kunst, Ivandić (2021); Perez Leon et al. (2021); Vašaničová et al. (2022); Băbăț et al. (2023); González-Rodríguez et al. (2023); Uyar et al. (2023); Vašaničová et al. (2023).

The Travel and Tourism Development Index (TTDI), directly evolved from the TTCI, was first published in May 2022, covering the year 2021. According to Uppink Calderwood, Soshkin (2022), the TTDI assesses and compares various factors and policies that facilitate the sustainable and resilient growth of the tourism sector, thereby contributing to a country's overall development. TTDI offers businesses, governments, and international organizations a strategic benchmarking tool for advancing the tourism sector. By facilitating cross-country comparisons and assessing nations' progress on tourism development drivers, it guides policies and investment decisions concerning tourism enterprises and the sector overall. The TTDI offers a distinct view of each analyzed country's strengths and areas for improvement. The goal is to assist countries in enhancing the long-term growth of their tourism sector in a sustainable and resilient way. Additionally, it offers a valuable platform for multi-stakeholder discussions to develop suitable policies and actions at local, national, regional, and global levels. The second edition of the TTDI was released in May 2024 and is known as TTDI 2024. The methodology for creating the TTDI has changed in 2024 compared to the original from 2021. The names of each subindex are illustrated in Figure 2.

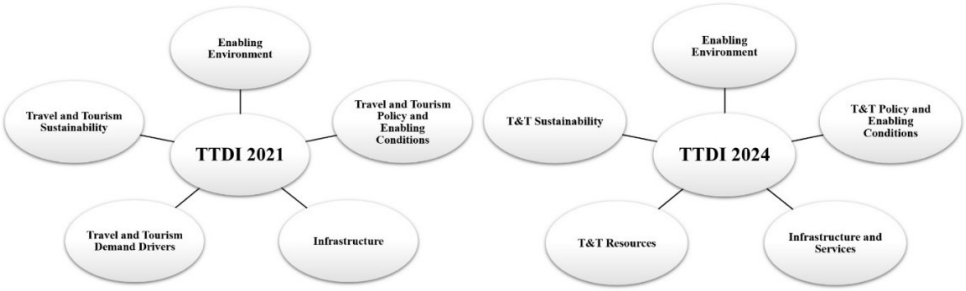

Figure 2. Comparison of the Travel and Tourism Development Index Frameworks

Source: own processing.

The individual subindexes are made up of pillars. Considering TTDI 2021, the individual 17 pillars are as follows: Business Environment, Safety and Security, Health and Hygiene, Human Resources and Labour Market, ICT Readines (subindex Enabling Environment); Prioritization of Travel and Tourism, International Openness, Price Competitiveness (subindex Travel and Tourism Policy and Enabling Conditions); Air Transport Infrastructure, Ground and Port Infrastructure, Tourist Service Infrastructure (subindex Infrastructure); Natural Resources, Cultural Resources, Non-Leisure Resources (subindex Travel and Tourism Demand Drivers); Environmental Sustainability, Socioeconomic Resilence and Conditions, Travel and Tourism Demand Pressure and Impact (subindex Travel and Tourism Sustainability). Considering TTDI 2024, the individual 17 pillars are as follows: Business Environment, Safety and Security, Health and Hygiene, Human Resources and Labour Market, ICT Readines (subindex Enabling

Environment); Prioritization of T&T, Openness to T&T, Price Competitiveness (subindex T&T Policy and Enabling Conditions); Air Transport Infrastructure, Ground and Port Infrastructure, Tourist Services and Infrastructure (subindex Infrastructure and Services); Natural Resources, Cultural Resources, Non-Leisure Resources (subindex T&T Resources); Environmental Sustainability, T&T Socioeconomic Impact, T&T Demand Sustainability (subindex T&T Sustainability). In 2021, 117 countries were assessed; in 2024, 119. In 2024, 5 countries were dropped from the ranking and 7 others were added.

The body of research focusing on the TTDI remains sparse and underdeveloped, indicating a significant gap in scholarly attention and study (e.g., Maulana et al., 2022; Ozkaya, Demirhan, 2022; Hefny, 2023; Dzurov Vargová et al., 2024; Lazarević et al., 2024; Marti, Puertas, 2024; Purwono et al., 2024; Salam, 2024; Vašaničová, Bartók, 2024).

3. METHODOLOGY

This paper aims to identify the degree of agreement between the new and the original calculation methodology in the TTDI values achieved by countries. From this aim, we can formulate the following research hypothesis:

Hypothesis 1: There is a correlation in the TTDI values achieved by countries between the new and the original calculation methodology.

The complementary first objective is to show the values achieved concerning the region in which the country is located and concerning the income group. The second objective is to quantify differences in the country's ranking between the original and new rankings within TTDI.

The secondary data used are available online on the World Economic Forum (2022) and World Economic Forum (2024) websites. Even though the new TTDI methodology was introduced for 2024, the data (values and rankings) for 2019 and 2021 have also been recalculated using this approach. Therefore, we will test our hypothesis for 2019 and 2021. The Spearman correlation coefficient will be used to determine the level of agreement. We use R software for visualization and calculations.

The research sample had to be adjusted because not all countries were analyzed in both years. The 5 countries (Cape Verde, Hong Kong SAR, Lesotho, Chad, Yemen) assessed in 2021 were not assessed in 2024 and, conversely, the 7 countries (Barbados, Algeria, Iran, Jamaica, Oman, Uzbekistan, Zimbabwe) assessed in 2024 were not assessed in 2021. The research sample, in this study, consists of 112 countries, which are further divided into two categories, namely region (Asia-Pacific, Europe and Eurasia, Middle East and North Africa, Sub-Saharan Africa, The Americas) and income group (High, Upper-middle, Lower-middle, Low-income economies). These categories are derived from the database of the World Economic Forum (2024). The lists of countries according to region and income group are in Appendix (Tables A1 and A2). As the research sample has been reduced to 112 countries, we recalculated the country rankings within the TTDI.

4. RESULTS AND DISCUSSION

Figures 3 and 4 visualize scatterplots that point to the relationship between the values of original and new TTDI in 2019 and 2021. Countries (dots) are color-coded by region (Figure 3) and income group (Figure 4). Our aim is to point out that the values of TTDI differ across groups. In all cases, the relationship is positive. Countries with low values of the original TTDI also have low values of the new TTDI and vice versa.

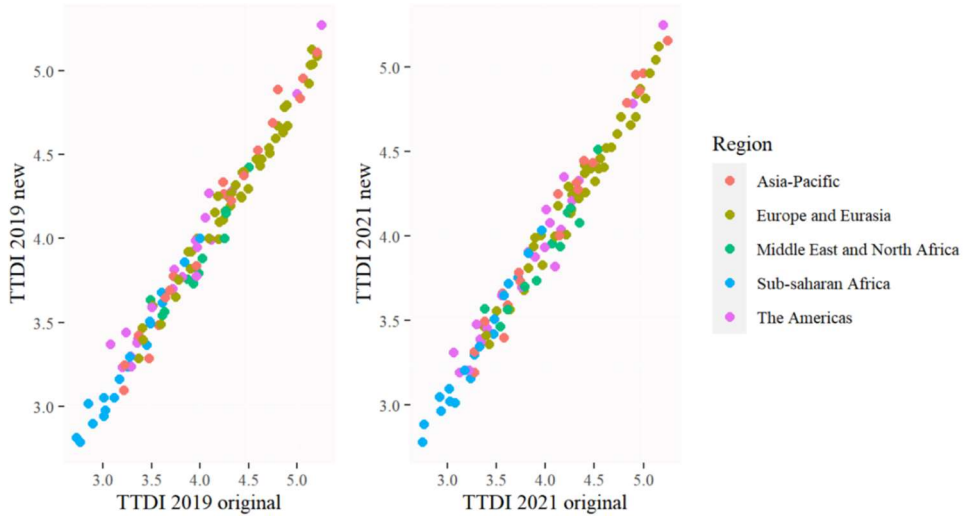

Figure 3. New and original TTDI values by region

Source: own processing using R.

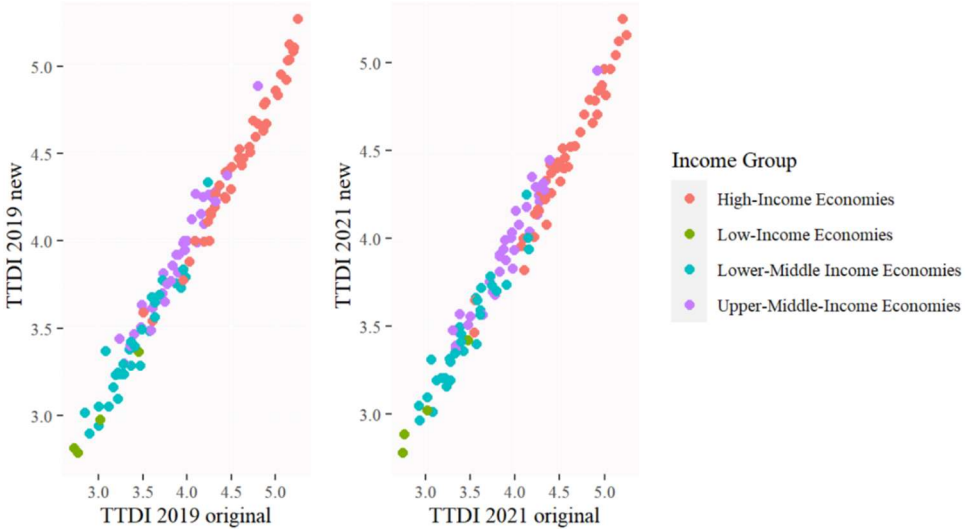

Figure 4. New and original TTDI values by income group

Source: own processing using R.

We see the highest values of TTDI in the Europe and Eurasia and the Asia-Pacific region. The lowest values are in the Sub-Saharan Africa region. The countries of the Middle East and North Africa region and The Americas acquire an intermediate level of TTDI values. According to the income group, we see the highest values of TTDI in the high-income economies and the lowest values in the low-income economies. The second highest values belong to the upper-middle-income economies.

Tables 1 and 2 present descriptive statistics of the TTDI values according to region and income group. The outcomes align with the graphical depiction in Figures 3 and 4.

Table 1. Descriptive statistics of the TTDI values according to region

	Asia-Pacific (19)				Europe and Eurasia (43)			
	2019 original	2019 new	2021 original	2021 new	2019 original	2019 new	2021 original	2021 new
Mean	4.13	4.09	4.15	4.14	4.36	4.27	4.34	4.26
S.D.	0.65	0.64	0.64	0.62	0.51	0.47	0.48	0.44
Min	3.21	3.10	3.27	3.20	3.36	3.29	3.37	3.36
Q1	3.60	3.57	3.59	3.63	4.03	4.00	4.03	4.00
Median	4.23	4.23	4.14	4.25	4.37	4.26	4.34	4.26
Q3	4.67	4.61	4.66	4.62	4.75	4.57	4.64	4.52
Max	5.21	5.11	5.25	5.16	5.20	5.13	5.15	5.12
	Middle East and North Africa (11)				**Sub-Saharan Africa (18)**			
	2019 original	2019 new	2021 original	2021 new	2019 original	2019 new	2021 original	2021 new
Mean	3.98	3.88	3.98	3.89	3.25	3.27	3.29	3.32
S.D.	0.32	0.28	0.37	0.32	0.37	0.36	0.36	0.37
Min	3.49	3.54	3.38	3.47	2.72	2.79	2.75	2.78
Q1	3.75	3.68	3.70	3.64	3.00	2.99	3.02	3.03
Median	3.98	3.79	4.06	3.94	3.20	3.20	3.26	3.25
Q3	4.26	4.08	4.24	4.11	3.48	3.50	3.55	3.61
Max	4.50	4.42	4.53	4.51	4.00	4.00	3.96	4.04
	The Americas (21)							
	2019 original	2019 new	2021 original	2021 new				
Mean	3.84	3.86	3.86	3.88				
S.D.	0.58	0.53	0.56	0.53				
Min	3.07	3.23	3.06	3.19				
Q1	3.35	3.40	3.34	3.46				
Median	3.81	3.78	3.90	3.88				
Q3	4.09	4.13	4.16	4.16				
Max	5.25	5.27	5.20	5.25				

Source: own processing using R.

Taking the medians from the highest values into account, the ranking by region (Table 1) is as follows: Europe and Eurasia region, Asia-Pacific region, Middle East and North Africa region, The Americas, and Sub-Saharan Africa region. In terms of medians according to the income group (Table 2), the order is from high-income economies to low-income economies. Considering the best values of TTDI according to analyzed regions (maximums in Tables 1 and 2), among the best countries are Japan (Asia-Pacific region), United Kingdom and Spain (Europe and Eurasia region), United Arab Emirates (Middle East and North Africa), Mauritius (Sub-Saharan Africa region), and the United States (The Americas region). According to the income groups, among the best countries are the United

States and Japan (high-income), China (upper-middle income), India (lower-middle income), and Rwanda (low-income).

Table 2. Descriptive statistics of the TTDI values according to income group

	High (44)				Low (4)			
	2019 original	2019 new	2021 original	2021 new	2019 original	2019 new	2021 original	2021 new
Mean	4.58	4.47	4.56	4.46	2.99	2.99	3.00	3.03
S.D.	0.42	0.42	0.40	0.40	0.33	0.27	0.34	0.28
Min	3.50	3.54	3.54	3.47	2.72	2.79	2.75	2.78
Q1	4.29	4.19	4.32	4.21	2.75	2.81	2.76	2.86
Median	4.59	4.45	4.53	4.41	2.89	2.90	2.89	2.95
Q3	4.89	4.79	4.90	4.79	3.13	3.08	3.14	3.12
Max	5.25	5.27	5.25	5.25	3.45	3.37	3.47	3.42
	Lower-Middle (30)				**Upper-Middle (34)**			
	2019 original	2019 new	2021 original	2021 new	2019 original	2019 new	2021 original	2021 new
Mean	3.43	3.41	3.46	3.46	3.89	3.91	3.91	3.94
S.D.	0.35	0.32	0.34	0.31	0.36	0.34	0.37	0.35
Min	2.84	2.90	2.92	2.97	3.23	3.30	3.30	3.37
Q1	3.20	3.23	3.22	3.21	3.64	3.64	3.73	3.69
Median	3.36	3.38	3.40	3.41	3.90	3.92	3.93	3.94
Q3	3.63	3.67	3.62	3.69	4.14	4.15	4.18	4.17
Max	4.23	4.34	4.15	4.25	4.80	4.89	4.92	4.96

Source: own processing using R.

Table 3. Hypothesis testing

	All countries (112)		Asia-Pacific (19)		Europe and Eurasia (43)	
	2019	2021	2019	2021	2019	2021
Spearman's rho	0.9884	0.9854	0.9895	0.9807	0.9858	0.9829
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Middle East and North Africa (11)		**Sub-Saharan Africa (18)**		**The Americas (21)**	
	2019	2021	2019	2021	2019	2021
Spearman's rho	0.9636	0.9364	0.9711	0.9732	0.9597	0.9545
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	High (44)		**Upper-Middle (34)**		**Lower-Middle (30)**	
	2019	2021	2019	2021	2019	2021
Spearman's rho	0.9908	0.9780	0.9731	0.9624	0.9524	0.9533
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: own processing using R.

The differences between the descriptive statistics in 2019 and 2021 using the new and original methodologies are minimal. Table 3 presents the results of testing the research hypothesis using Spearman's correlation coefficient. The agreement in the achieved TTDI values between the new and the original methodology is statistically significant at the 0.001

significance level. Spearman's correlation coefficients are close to 1, and thus, the agreements can be considered very high. Coefficients are calculated for the sample of all analyzed countries and individual groups by region and income group (except for low-income economies due to the small sample size).

The results show that despite the changed methodology for calculating the TTDI, the values achieved by the countries are highly correlated.

Table 4 shows differences in the country's ranking between the original and new rankings within TTDI. A higher drop is indicated by a deeper red color, and a higher growth is indicated by a deeper green color. The highest drop is recorded for Saudi Arabia (from 32nd to 50th place in 2021), Uruguay (from 54th to 67th place in 2021), and Pakistan (from 81st to 93rd place in 2021). On the other hand, the highest increase is recorded for Brazil (from 48th to 30th place in 2021), India (from 45th to 29th place in 2019 and from 53rd to 38th place in 2021), and Argentina (from 58th to 45th place in 2021).

Table 4. Differences in countries' rankings between the original and new rankings within TTDI

	Δ original – new			Δ original – new			Δ original – new			Δ original – new	
Country	**2019**	**2021**	**Country**	**2019**	**2021**	**Country**	**2019**	**2021**	**Country**	**2019**	**2021**
AGO	3	3	EGY	-9	-10	KOR	4	3	PHL	6	5
ALB	-5	-5	ESP	3	0	KWT	-4	-4	POL	2	0
ARE	0	4	EST	-10	-9	LAO	3	5	PRT	0	1
ARG	6	13	FIN	-1	0	LBN	8	11	PRY	11	10
ARM	1	-6	FRA	0	0	LKA	1	1	QAT	-6	-2
AUS	1	1	GBR	-1	0	LTU	-4	-5	ROU	4	9
AUT	-4	-3	GEO	-3	-6	LUX	-2	-5	RWA	-6	-4
AZE	7	7	GHA	-3	-1	LVA	-7	-7	SAU	-8	-18
BEL	1	0	GRC	1	0	MAR	-3	-4	SEN	0	2
BEN	-1	-4	GTM	3	1	MDA	-5	-6	SGP	-2	0
BGD	-3	-5	HND	0	0	MEX	1	-3	SLE	1	0
BGR	-1	1	HRV	-3	-2	MKD	3	1	SLV	1	-1
BHR	-6	-3	HUN	-6	-4	MLI	-1	0	SRB	-1	1
BIH	3	4	CHE	-1	-5	MLT	-7	-7	SVK	0	-2
BOL	2	-1	CHL	2	2	MNE	4	5	SVN	2	2
BRA	17	18	CHN	6	5	MNG	-1	5	SWE	1	0
BWA	-1	5	IDN	7	9	MUS	2	8	THA	-7	0
CAN	0	0	IND	16	15	MWI	-2	-1	TJK	-2	-2
CIV	-2	-4	IRL	-2	-3	MYS	0	4	TTO	3	5
CMR	-1	-1	ISL	-1	-6	NAM	3	1	TUN	-5	-4
COL	5	6	ISR	-4	-2	NGA	2	2	TUR	11	10
CRI	-5	-3	ITA	0	0	NIC	-5	0	TZA	0	1
CYP	2	6	JOR	-9	-8	NLD	-3	-2	URY	-7	-13
CZE	-5	-7	JPN	-1	-1	NPL	1	2	USA	0	1
DEU	-1	0	KAZ	7	7	NZL	3	3	VEN	12	7
DNK	0	0	KEN	5	4	PAK	-11	-12	VNM	-3	-5
DOM	7	5	KGZ	-6	-8	PAN	0	-3	ZAF	6	3
ECU	1	-3	KHM	-5	-2	PER	0	-1	ZMB	1	-1

Note: countries' codes are according to Alpha-3.

Source: own calculations.

5. CONCLUSION

The evolution in TTDI methodology ensures that the TTDI remains a robust tool for assessing and guiding tourism development policies globally. The results reveal that, despite the alterations in the TTDI calculation methodology, the values obtained by the countries remain highly correlated. The highest TTDI values are observed in Europe, Eurasia, and the Asia-Pacific region, while the lowest values are found in Sub-Saharan Africa. Countries in the Middle East and North Africa, as well as the Americas, display intermediate TTDI levels. When categorized by income group, high-income economies report the highest TTDI values, whereas low-income economies show the lowest. Upper-middle-income economies have the second-highest TTDI values.

Regular monitoring of tourism development indicators allows for the evaluation of existing policies and initiatives. By understanding key indicators, policymakers can make data-driven decisions that optimize tourism benefits and address challenges. This ensures that development strategies promote sustainability and prevent the depletion of natural resources, cultural degradation, and other negative consequences. Identifying and analyzing potential risks allows for the development of strategies to mitigate these risks. This ensures the resilience and long-term viability of the tourism sector. Moreover, comprehensive data on tourism development fosters transparency and collaboration among stakeholders, including government agencies, private sector players, and local communities.

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APPENDIX A

Table A1. Countries according to region

Asia-Pacific		Europe and Eurasia				Middle East and North Africa	Sub-Saharan Africa		The Americas	
AUS	MNG	ALB	ESP	ISL	NLD	ARE	AGO	MWI	ARG	MEX
BGD	MYS	ARM	EST	ITA	POL	BHR	BEN	NAM	BOL	NIC
CHN	NPL	AUT	FIN	KAZ	PRT	EGY	BWA	NGA	BRA	PAN
IDN	NZL	AZE	FRA	KGZ	ROU	ISR	CIV	RWA	CAN	PER
IND	PAK	BEL	GBR	LTU	SRB	JOR	CMR	SEN	COL	PRY
JPN	PHL	BGR	GEO	LUX	SVK	KWT	GHA	SLE	CRI	SLV
KHM	SGP	BIH	GRC	LVA	SVN	LBN	KEN	TZA	DOM	TTO
KOR	THA	CYP	HRV	MDA	SWE	MAR	MLI	ZAF	ECU	URY
LAO	VNM	CZE	HUN	MKD	TJK	QAT	MUS	ZMB	GTM	USA
LKA		DEU	CHE	MLT	TUR	SAU			HND	VEN
		DNK	IRL	MNE		TUN			CHL	

Note: countries' codes are according to Alpha-3.

Source: own processing.

Table A2. Countries according to income group

High				Upper-middle			Lower-middle			Low
ARE	EST	ISR	POL	ALB	GEO	MYS	AGO	JOR	NPL	MLI
AUS	FIN	ITA	PRT	ARG	GTM	NAM	BEN	KEN	PAK	MWI
AUT	FRA	JPN	QAT	ARM	CHN	PAN	BGD	KGZ	PHL	RWA
BEL	GBR	KOR	SAU	AZE	IDN	PER	BOL	KHM	SEN	SLE
BHR	GRC	KWT	SGP	BGR	KAZ	PRY	CIV	LAO	TJK	
CAN	HRV	LTU	SVK	BIH	LBN	ROU	CMR	LKA	TUN	
CYP	HUN	LUX	SVN	BRA	MDA	SLV	EGY	MAR	TZA	
CZE	CHE	LVA	SWE	BWA	MEX	SRB	GHA	MNG	VEN	
DEU	CHL	MLT	TTO	COL	MKD	THA	HND	NGA	VNM	
DNK	IRL	NLD	URY	CRI	MNE	TUR	IND	NIC	ZMB	
ESP	ISL	NZL	USA	DOM	MUS	ZAF				
				ECU						

Note: countries' codes are according to Alpha-3.

Source: own processing.

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