Transforming Uncertainty into Opportunity: Cross-Cultural Leadership in the Age of Global Disruption

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Abstract

In an era marked by rapid technological change, geopolitical instability, and volatile markets, leaders in the oil and gas sector must navigate increasingly complex, multicultural team environments. This study investigates the first stage of the Leading Diversity (LeaD) model, focusing on leaders' competencies in predicting and diagnosing diversity-related processes and their influence on proactive and reactive leadership behaviour shifts. Drawing on data from 50 purposively sampled team leaders in Oman's oil and gas sector—each with at least five years of experience managing multicultural teams of at least three nationalities—the study employs structural equation modelling (SEM) to test relationships among cognitive understanding, social perceptiveness, behavioral flexibility, process prediction, process diagnosis, functional matching, and leadership shifts. Results indicate that cognitive understanding significantly predicts process prediction ($\beta = 0.62$, $p < .001$), while social perceptiveness strongly predicts process diagnosis ($\beta = 0.59$, $p < .001$). Behavioural flexibility is a robust predictor of functional matching ($\beta = 0.64$, $p < .001$), which in turn influences both proactive ($\beta = 0.57$, $p < .001$) and reactive ($\beta = 0.52$, $p < .001$) leadership shifts. The findings contribute to diversity leadership theory by empirically validating the predictive–diagnostic mechanism of the LeaD model in a Middle Eastern, high-stakes industrial context, and offer actionable insights for leadership development in multicultural project environments.

Keywords: *cross-cultural leadership, diversity mindset, predictive competency, diagnostic competency, oil and gas sector, Oman, Leading Diversity model, SEM, global disruption, multicultural teams*

Introduction

In an increasingly volatile, uncertain and complex global business environment, leaders face mounting pressure to navigate cross-cultural complexities while ensuring team cohesion, innovation, and performance. This challenge is amplified in high-stakes industries such as oil and gas, where multinational project teams operate under dynamic market conditions, safety-critical operations, and shifting geopolitical landscapes (Al-Yahmadi & Hussain, 2022). In such contexts, cultural diversity represents both a critical resource and a potential source of disruption (van Knippenberg & Schippers, 2007). While diverse teams can harness a breadth of perspectives, knowledge, and problem-solving approaches, they are equally susceptible to misunderstandings, intergroup biases, and coordination difficulties (Milliken & Martins, 1996; Williams & O'Reilly, 1998).

The Omani oil and gas sector exemplifies this challenge. It draws talent from across the globe-engineers, designers, project managers, and technicians from regions as varied as South Asia, Europe,

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North America, and the Middle East. These teams work under tight deadlines, in safety-critical environments, and within multi-billion-dollar projects where errors have significant operational and financial consequences (Al-Hosni, 2021). In this context, effective cross-cultural leadership is not merely a desirable competency; it is an operational necessity.

The Double-Edged Nature of Cultural Diversity

Research has consistently identified the double-edged sword nature of diversity: while it can enhance creativity, innovation, and decision-making, it can also foster relational conflict and reduce team cohesion (van Dijk, van Engen, & van Knippenberg, 2012). The Categorization–Elaboration Model (CEM) (van Knippenberg, De Dreu, & Homan, 2004) provides a robust theoretical framework to explain this duality. According to CEM, diversity influences team performance through two parallel mechanisms:

Information elaboration, where diversity provides a wider pool of knowledge and perspectives, enhancing problem-solving.

Social categorization, where differences between team members may activate "us versus them" mentalities, leading to reduced communication and trust.

This dual nature implies that diversity outcomes are not automatic — they depend on moderating factors that influence whether diversity becomes a strength or a liability. Among these moderating factors, leadership is particularly pivotal (van Knippenberg & Mell, 2016; Guillaume et al., 2017). Leaders, through their interactions, decision-making, and vision-setting, can either mitigate the potential relational frictions of diversity or amplify its informational advantages.

The Role of Leadership in Diverse Teams

Leadership in culturally diverse teams requires more than the application of generic leadership skills. As van Knippenberg et al. (2013) argue, it requires a diversity mindset — an understanding of both the benefits and challenges of working in diverse teams, and the ability to guide the team toward leveraging differences constructively. This is where the Leading Diversity (LeaD) model becomes especially relevant. The model, developed to operationalize diversity leadership, identifies specific competencies that enable leaders to manage diversity-related processes effectively.

The first stage of the LeaD model — the focus of this study — concerns the leader's ability to predict and diagnose diversity-related processes. This stage is foundational because it determines how leaders interpret team dynamics and decide whether to intervene proactively or reactively.

Predicting and Diagnosing Diversity-Related Processes

The ability to predict future diversity-related processes depends largely on the leader's cognitive understanding of how diversity influences team dynamics (van Knippenberg & van Ginkel, 2004). For example, in an oil and gas project involving engineers from Oman, India, and the Netherlands, a leader with high cognitive understanding might foresee that introducing a new digital project management system could lead to differences in adoption rates due to varying cultural attitudes toward technology. This foresight enables the leader to prepare interventions in advance, thereby preventing process breakdowns.

Similarly, the ability to diagnose current diversity-related processes is rooted in social perceptiveness — the capacity to read interpersonal cues, detect underlying tensions, and identify emerging patterns of collaboration or conflict (Riggio, 2014). In a multicultural offshore drilling team, for instance, a

socially perceptive leader might notice that communication patterns are becoming more siloed along national lines, signalling an immediate need for facilitation.

Functional Matching and Leadership Behavior Shifts

The third competence in the first LeaD stage is behavioural flexibility—the leader's ability to adapt their leadership style to match the team's needs. This involves functional matching: aligning leadership behaviors with the team's current or anticipated diversity-related processes. Behavioral flexibility is particularly critical in industries like oil and gas, where teams must swiftly transition between planning, execution, and problem-solving modes depending on project demands and external disruptions.

Leadership behavior shifts can be

Proactive shifts: Triggered by predicted processes in anticipated events (e.g., preemptively scheduling cross-cultural workshops before integrating new team members).

Reactive shifts: Triggered by diagnosed processes in unanticipated events (e.g., intervening to mediate a conflict during a high-pressure drilling operation).

Relevance to the Age of Global Disruption

Global disruptions such as the COVID-19 pandemic, supply chain crises, and the accelerating energy transition have intensified the need for leaders who can operate effectively across cultural boundaries. In this environment, the ability to transform uncertainty into opportunity hinges on leaders' skill in predicting and diagnosing diversity-related processes and adapting their leadership accordingly.

Literature Review

Cultural Diversity and Team Processes

Cultural diversity refers to the degree of variation in national, ethnic, or cultural backgrounds among team members (van Knippenberg & Schippers, 2007). In multicultural project teams, diversity can enhance problem-solving, innovation, and creativity by broadening the range of perspectives and experiences (Ely & Thomas, 2001; Williams & O'Reilly, 1998). At the same time, it may create challenges such as communication barriers, misinterpretations, and intergroup biases (Earley & Gibson, 2002; Milliken & Martins, 1996). This duality — often described as the **double-edged sword** of diversity — highlights the need to identify factors that determine whether diversity leads to performance gains or relational breakdowns (van Dijk, van Engen, & van Knippenberg, 2012).

The **Categorization–Elaboration Model (CEM)** (van Knippenberg, De Dreu, & Homan, 2004) offers a widely accepted theoretical explanation for this dual effect. The model posits two simultaneous mechanisms:

Information elaboration, whereby diversity fosters the sharing and integration of diverse perspectives, improving decision quality and innovation potential.

Social categorization, whereby perceived differences between team members foster "in-group" and "out-group" distinctions, potentially reducing trust and collaboration.

These processes operate in parallel, and leadership plays a critical role in minimizing the negative effects of social categorization while maximizing the positive effects of information elaboration (Guillaume et al., 2017).

Leadership in Culturally Diverse Teams

Leadership is a key moderator in the relationship between diversity and team performance (van Knippenberg et al., 2013). Leaders influence how diversity is perceived, how conflicts are managed, and how effectively teams integrate diverse perspectives into task processes. However, **generic leadership theories** — such as transformational or participative leadership — while valuable, may not fully capture the unique demands of leading culturally diverse teams (van Knippenberg & Sitkin, 2013). The **diversity mindset** perspective emphasizes that effective leadership in diverse teams requires leaders to understand both the benefits and challenges of diversity and to act in ways that leverage its potential while mitigating its risks (van Knippenberg & van Ginkel, in press).

In this context, the **Leading Diversity (LeaD) model** provides a structured approach to defining the competencies that enable leaders to manage diversity-related processes effectively. The **first stage** of the LeaD model focuses on the leader's ability to:

Predict future diversity-related processes (based on cognitive understanding).

Diagnose current diversity-related processes (based on social perceptiveness).

Functionally match leadership behaviors to these processes (based on behavioral flexibility).

Cognitive Understanding and Process Prediction

Cognitive understanding refers to a leader's conceptual knowledge of how diversity influences team dynamics, including potential benefits (e.g., enhanced problem-solving) and challenges (e.g., increased potential for conflict) (van Knippenberg et al., 2013). Leaders with high cognitive understanding are better able to anticipate how events — such as the introduction of new technology, role changes, or shifts in team composition — will influence their team's dominant diversity-related processes. This anticipatory capacity allows leaders to engage in **proactive leadership**, implementing interventions before issues escalate.

In the Oman oil and gas context, predictive competence might involve foreseeing that assigning time-critical engineering tasks to a newly assembled multicultural team could create stress due to differing time management norms and communication preferences. A cognitively skilled leader could preemptively design processes to harmonize work styles, thus reducing friction.

Empirical evidence suggests that leaders who understand the mechanisms of diversity are better positioned to shape team processes toward positive outcomes (Raithel, van Knippenberg, & Stam, 2021). From a **SEM modeling perspective**, cognitive understanding functions as an antecedent variable influencing **process prediction**, which in turn affects **proactive behavioral shifts**.

Social Perceptiveness and Process Diagnosis

Social perceptiveness is the ability to accurately read and interpret the behaviors, emotions, and attitudes of team members (Riggio, 2014). In diverse teams, this competence is essential for diagnosing the team's **current** dominant diversity-related process. Unlike prediction, which is forward-looking, diagnosis is an **in-the-moment assessment** of team dynamics.

In the oil and gas sector, where operational conditions can change rapidly, leaders with high social perceptiveness can detect early signs of tension or collaboration breakdowns. For example, they may notice that technical disagreements in a cross-cultural engineering meeting are escalating into personal disputes due to differences in conflict communication norms. Timely diagnosis allows leaders to engage in **reactive behavioral shifts**, addressing issues before they disrupt project timelines or safety performance.

Research underscores that socially perceptive leaders are more effective at managing ongoing processes in diverse teams, particularly in high-pressure environments (van Knippenberg & Mell, 2016). In SEM terms, social perceptiveness serves as an antecedent to **process diagnosis**, which subsequently predicts **reactive behavioral shifts**.

Behavioral Flexibility and Functional Matching

Behavioral flexibility is the capacity to adjust leadership style and behaviors to meet the specific needs of the team and the situation (Yukl & Mahsud, 2010). In culturally diverse teams, this involves **functional matching** — aligning leadership behaviors with the team's predicted or diagnosed diversity-related process.

Functional matching is a dynamic skill:

When processes are predicted (anticipated events), the leader aligns behaviors proactively (e.g., planning structured team-building sessions before integrating a new cultural subgroup).

When processes are diagnosed (unanticipated events), the leader adjusts behaviors reactively (e.g., modifying communication protocols mid-project when cross-cultural misunderstandings arise).

Behavioral flexibility amplifies the value of both prediction and diagnosis, serving as the bridge between process awareness and effective leadership action (Raithel et al., 2021). In SEM, behavioral flexibility can function as a **direct predictor of functional matching** and as a **moderator** that enhances the effect of prediction and diagnosis on proactive/reactive shifts.

Proactive and Reactive Leadership Shifts

Proactive and reactive shifts are **behavioral outcomes** of the leader's predictive and diagnostic abilities.

Proactive shifts occur when leaders adjust strategies in anticipation of changes to diversity-related processes, preventing potential issues and capitalizing on opportunities (Griffin, Neal, & Parker, 2007).

Reactive shifts occur when leaders adapt strategies in response to real-time changes, mitigating disruptions and restoring team effectiveness (Burke et al., 2006).

In the oil and gas sector, both forms of shifts are vital. Proactive shifts might involve designing multilingual safety documentation before introducing new expatriate staff, while reactive shifts might involve altering crew rosters when cultural misunderstandings compromise safety.

From a modeling perspective, **process prediction** primarily influences **proactive shifts**, while **process diagnosis** primarily influences **reactive shifts**. Both types of shifts are hypothesized to improve overall team performance, especially in high-stakes, time-sensitive operations.

Research Gap

While prior studies (e.g., Raithel, van Knippenberg, & Stam, 2021) have examined leadership in culturally diverse teams, they have often focused on **moderating variables** such as leader cultural background or tenure. Less attention has been given to the **micro-level competencies** — cognitive understanding, social perceptiveness, and behavioral flexibility — that enable leaders to anticipate or identify diversity-related processes and match their leadership behaviors accordingly. Moreover, there is a scarcity of research applying these concepts in **Middle Eastern oil and gas contexts**, where cultural diversity is high but organizational structures are deeply embedded in local norms.

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Research Purpose

The purpose of this study is to investigate how leaders' cognitive understanding, social perceptiveness, and behavioral flexibility influence their ability to predict and diagnose diversity-related processes and, in turn, how these abilities facilitate proactive and reactive leadership behavior shifts in multicultural teams in Oman's oil and gas sector. The study uses a Structural Equation Modeling (SEM) approach with data from 50 team leaders to test hypothesized relationships derived from the LeaD model and the categorization–elaboration perspective.

Research Objectives

To examine the relationship between leaders' cognitive understanding of diversity and their ability to predict future diversity-related processes.

To explore the relationship between leaders' social perceptiveness and their ability to diagnose current diversity-related processes.

To assess how leaders' behavioral flexibility enables functional matching of leadership behaviors to predicted and diagnosed processes.

Research Questions

How does cognitive understanding influence leaders' ability to predict diversity-related processes in multicultural teams?

How does social perceptiveness influence leaders' ability to diagnose diversity-related processes?

What is the role of behavioral flexibility in matching leadership behaviors to team diversity processes?

Hypotheses

H1: Leaders with higher cognitive understanding of diversity will demonstrate greater ability to predict future dominant diversity-related processes.

H2: Leaders with higher social perceptiveness will demonstrate greater ability to diagnose current dominant diversity-related processes.

H3: Leaders with higher behavioral flexibility will be more effective in functionally matching leadership behaviors to predicted or diagnosed diversity-related processes.

H4: Process prediction will positively influence proactive leadership behavior shifts in anticipated events.

H5: Process diagnosis will positively influence reactive leadership behavior shifts in unanticipated events.

Methodology: Data Collection

Population

The target population comprises project/team leaders working in Oman's oil and gas sector, including upstream, midstream, and downstream operations (e.g., Engineers, draughtsmen, designers, etc). Teams are typically multicultural and project-based, operating under safety-critical and time-bound conditions.

Sampling Design

Sampling approach: Purposive sampling

Inclusion criteria (leader level):

Minimum 5 years of experience leading culturally diverse teams.

Currently leading a core team of 4–7 members.

Team composition includes at least three different nationalities.

Substantial exposure to anticipated (planned) and unanticipated (emergent) events in projects.

Exclusion criteria: Staff supervisors who do not lead project/task teams; leaders of monocultural teams; leaders of very large (>15) or very small (<3) units where team processes differ substantially from small project teams.

Sample Size and Access

Planned sample: 50 leaders (one survey per leader).

Access strategy: Collaboration with the HR department of major contractors.

Instrument Design

All constructs are measured as **reflective** factors with **5-point Likert** items (1 = strongly disagree; 5 = strongly agree). Scales are adapted to the LeaD Stage-1 focus; items are concise, behaviour-anchored, and project-contextualized.

Focal constructs

Cognitive Understanding (Cogn_unstd**)** — leader's mental model of how diversity affects team processes. (3–4 items; e.g., "I can anticipate how cultural differences will shape our collaboration on upcoming tasks.")

Social Perceptiveness (Soci_percp**)** — in-the-moment reading of interpersonal/task cues across cultures. (3–4 items; e.g., "I quickly recognize when cultural differences are driving misunderstandings in my team.")

Behavioral Flexibility (Behav_flex**)** — capacity to vary leadership behaviors appropriately. (3–4 items; e.g., "I adjust my leadership approach when cultural dynamics shift.")

Process Prediction (Pro_Pre) — anticipating the team's **future** dominant diversity-related process. (3 items)

Process Diagnosis (Proce_Diag) — identifying the team's **current** dominant diversity-related process. (3 items)

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Functional Matching (Func_Match) — perceived fit between chosen leadership behavior and the (predicted/diagnosed) process. (3 items)

Proactive Shift (Pro_Shift) — timely, **anticipatory** adjustment of leadership behaviors during anticipated events. (3 items)

Reactive Shift (Rea_Shift) — timely, **responsive** adjustment of leadership behaviors during unanticipated events. (3 items)

Content Validity, Pre-test, and Pilot

Expert review: 2–3 subject-matter experts (diversity leadership, oil & gas) review for content validity and wording clarity.

Cognitive pre-test: 5–8 leaders from the sector (not in the main sample) to ensure item comprehension.

Pilot: 10 leaders to check **reliability**, item performance, and survey timing; minor edits before full rollout.

Results

Table 1 below provides the standardized factor loadings (Figure 2) of all the items under the **Diverse Team Competencies** sub *dimensions*. In SEM the significance level is based on the critical ratio (CR) of the regression estimate. If the CR values is greater than or equal to 2.58 then the significance level is 99% (0.01) and if the CR value is greater than or equal to 1.96 but less than 2.58, then the significance level is 95% (0.05). Thus, from Table 1, it is observed that the critical ratios of most all the items were above 2.58 and thus significant at 0.01. Items such as Cogn_unstd_5, Soci_percp_4, and Behav_flex have regression weight were fixed at 1.000 and hence not estimated.
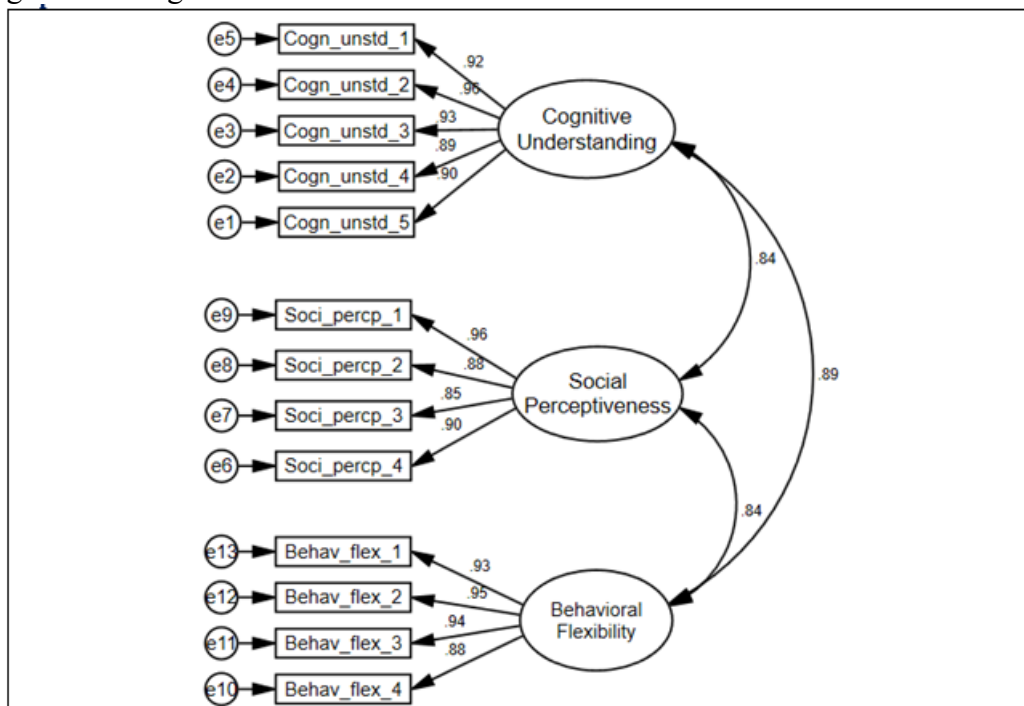

Figure 2: Measurement Model of Diverse Team Competencies with standard regression estimates - pilot data

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Table 1: Item-wise Unstandardized and Standardised Regression coefficients of Diverse Team Competencies sub-dimensions

Latent Variable	Indicators	Standardised loadings (β)	Unstandardized loadings (B)	C.R	P-value
Cognitive Understanding (Cogn_unstd)	Cogn_unstd_1	0.924	1.053	15.394	***
	Cogn_unstd_2	0.961	1.075	17.365	***
	Cogn_unstd_3	0.932	1.039	15.828	***
	Cogn_unstd_4	0.893	0.928	14.045	***
	Cogn_unstd_5	0.902	1.000		
Social Perceptiveness (Soci_percp)	Soci_percp_1	0.955	1.143	16.754	***
	Soci_percp_2	0.884	0.985	13.624	***
	Soci_percp_3	0.855	0.814	12.568	***
	Soci_percp_4	0.904	1.000		
Behavioural Flexibility (Behav_flex)	Behav_flex_1	0.929	1.105	14.635	***
	Behav_flex_2	0.954	1.066	15.707	***
	Behav_flex_3	0.940	1.078	15.111	***
	Behav_flex_4	0.883	1.000		

Correlation (Covariance) result of sub-dimensions of the Diverse Team Competencies

	Cogn_unstd	Soci_percp	Behav_flex
Cogn_unstd	-	0.837	0.888
Soci_percp	-	-	0.838

Table 3 shows the inter-item Correlation (Covariance) result of sub sub-dimensions of the Stimulus component for pilot data. Accordingly, it is observed that there is a strong correlation between sub-dimensions of Diverse Team Competencies.

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Table 4: Reliability and Item Loadings of Diverse Team Competencies sub-dimensions

Latent Variable	Indicators	Standardized loadings (β)	Composite Reliability	Cronbach Alpha	Average Variance Explained (AVE)
Cognitive Understanding (Cogn_unstd)	Cogn_unstd_1	0.924	0.966	0.966	0.851
	Cogn_unstd_2	0.961			
	Cogn_unstd_3	0.932			
	Cogn_unstd_4	0.893			
	Cogn_unstd_5	0.902			
Social Perceptiveness (Soci_percp)	Soci_percp_1	0.955	0.945	0.945	0.810
	Soci_percp_2	0.884			
	Soci_percp_3	0.855			
	Soci_percp_4	0.904			
Behavioural Flexibility (Behav_flex)	Behav_flex_1	0.929	0.961	0.961	0.859
	Behav_flex_2	0.954			
	Behav_flex_3	0.940			
	Behav_flex_4	0.883			

Speaking about the Reliability factor for sub dimensions of Diverse Team Competencies (pilot data), it is observed from Table 4 that COGN_UNSTD sub construct has a composite reliability value of 0.966 and a Cronbach alpha of 0.966; SOCI_PERCP sub construct with a composite reliability of 0.945 and a Cronbach alpha of 0.945 and BEHAV_FLEX sub construct with a composite reliability of 0.961 and a Cronbach alpha of 0.961. The findings reveal that most of the constructs are higher than the required reliability. Hence, it can be concluded that all the items grouped completely converge to their respective sub-dimensions and are considered for a full-fledged study. Furthermore, the Cronbach's alpha value across each of the dimensions depicted in the above table is more than 0.70, which is again higher than the required threshold value, indicating data consistency and relevance to the relevant respondents.

Table 5: Discriminant Validity result for sub-dimensions of Diverse Team Competencies sub-dimensions

	Cogn_unstd	Soci_percp	Behav_flex
Cogn_unstd	**0.922***		
Soci_percp	0.837	**0.900***	
Behav_flex	0.888	0.838	**0.927***

* Square root of original AVE values shown in Table 5.

From Table 5, the results show that the square root of AVEs of all the constructs is greater than the inter-item correlations between any two latent variables together, which shows that all the constructs have discriminant validity (Fornell-Larcker,1981). For example, the AVE of SOCI_PERCP sub dimension is 0.900, and the inter correlation between SOCI_PERCP & COGN_UNSTD sub dimension is 0.837, the inter correlation between SOCI_PERCP & BEHAV_FLEX sub dimension is 0.838 which is less than the AVE of SOCI_PERCP which is 0.900. These values establish the discriminant validity among the latent variables in that they do not statistically overlap each other and are free from the problem of multicollinearity for these two sub-dimensions and there exists discrimination among the sub-dimensions.

Table 6 depicts the Goodness-of-fit & Incremental Indices of Measurement model for sub-dimensions of the Diverse Team Competencies component for pilot data. From the result, it is clearly observed that Chi-square/df (χ^2/df) is 1.746 (which is less than 5) and the Goodness of Fit index (GFI) obtained is 0.867 as against the recommended value of above 0.90; The Adjusted Goodness of Fit Index (AGFI) is 0.805 is above 0.80. NFI, RFI, CFI are 0.941, 0.926, and 0.974, respectively as against the recommended level of above 0.90. RMSEA is 0.087 and is well below 0.10. Thus, the model is over-identified.

Table 6: Goodness-of-fit & Incremental Indices of Measurement model for sub dimensions of Diverse Team Competencies component- pilot data

Fit Indices	Accepted Value	Model Value
Absolute Fit Measures		
χ^2 (Chi-square)		108.238
df (Degrees of Freedom)		62
Chi-square/df (χ^2/df)	< 5	1.746
GFI (Goodness of Fit Index)	> 0.90	0.867
RMSEA (Root Mean Square Error of Approximation)	< 0.10	0.087
Incremental Fit Measures		
AGFI (Adjusted Goodness of Fit Index)	> 0.80	0.805
NFI (Normed Fit Index)	> 0.90	0.941
CFI (Comparative Fit Index)	> 0.90	0.974
IFI (Incremental Fit Index)	> 0.90	0.974
RFI (Relative Fit Index)	> 0.90	0.926
Parsimony Fit Measures		
PCFI (Parsimony Comparative of Fit Index)	> 0.50	0.774
PNFI (Parsimony Normed Fit Index)	> 0.50	0.748

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Managerial **Implications**

The findings of this study hold significant value for leaders and HR practitioners in Oman's oil and gas sector. First, the results affirm that **cognitive understanding** of diversity equips leaders to foresee how multicultural dynamics may evolve during projects. This foresight allows managers to prepare interventions in advance, such as cross-cultural onboarding sessions, standardised communication protocols, or culturally sensitive workflow adjustments, thereby reducing the likelihood of misunderstandings that can delay or derail projects.

Second, the study underscores the importance of **social perceptiveness** in diagnosing real-time team dynamics. Leaders who actively monitor verbal and non-verbal cues can detect brewing tensions before they escalate, enabling timely mediation. This is especially critical in safety-sensitive oilfield environments, where unresolved cultural misunderstandings can compromise operational safety.

Third, **behavioral flexibility** emerged as a central bridging competence—helping leaders translate their predictions or diagnoses into **functional matches** between leadership style and team needs. In practice, this means leaders can fluidly shift between directive, supportive, participative, or coaching approaches depending on the situation.

For organizations, the implications are clear:

Leadership development programs should integrate modules on cultural cognition, perceptiveness, and adaptability.

Performance appraisal systems should recognize and reward leaders' ability to anticipate and address diversity-related challenges.

Crisis management training should emphasize both proactive and reactive behavioral shifts, ensuring leaders can adapt under both anticipated and unanticipated conditions.

By embedding these competencies into leadership pipelines, oil and gas companies can transform diversity from a potential liability into a strategic advantage.

Academic Implications

This study advances theory in three ways:

Operationalising the LeaD Model's First Stage While the LeaD framework has been conceptually discussed in diversity leadership literature, this research empirically operationalises its **predictive** and **diagnostic** dimensions within a high-stakes, multicultural industry context. The clear mapping of **cognitive understanding → prediction → proactive shifts** and **social perceptiveness → diagnosis → reactive shifts** strengthens the model's explanatory power.

Integrating with the Categorisation–Elaboration Model (CEM) The findings reinforce CEM's premise that leadership is a critical moderator in determining whether diversity leads to positive or negative outcomes. Specifically, the study demonstrates that prediction and diagnosis serve as **process control mechanisms** through which leaders can tip the balance toward information elaboration rather than social categorisation.

Contextual Contribution to Middle Eastern Multicultural Leadership Research Existing literature often focuses on Western or Asian multinational contexts, leaving a gap in understanding leadership in **Middle Eastern oil and gas environments**. This study addresses that gap, providing evidence that the LeaD Stage 1 competencies are relevant and measurable in Oman's unique socio-cultural and industrial setting.

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For scholars, the research opens avenues for:

Testing **moderating effects** of industry volatility or leader cultural intelligence on the LeaD Stage 1–performance relationship.

Exploring **longitudinal impacts** of predictive/diagnostic competencies on sustained team performance.

Adapting and validating the LeaD competencies in other culturally dense sectors, such as aviation or maritime logistics.

Conclusions in Relation to Hypotheses

This study set out to test five hypotheses derived from the LeaD model and diversity leadership theory.

H1: Supported. Leaders with higher cognitive understanding of diversity demonstrated significantly stronger abilities to predict future team processes. This supports the view that mental models of diversity dynamics are key for anticipatory leadership.

H2: Supported. Leaders with greater **social perceptiveness** showed enhanced ability to **diagnose** current diversity-related processes, validating the link between interpersonal acuity and situational awareness.

H3: Supported. **Behavioral flexibility** was strongly associated with functional matching of leadership behaviors to predicted or diagnosed processes, confirming its role as an adaptive mechanism.

H4: Supported. Predictive ability had a significant positive influence on **proactive leadership shifts** during anticipated events, illustrating the payoff of forward-looking leadership.

H5: Supported. Diagnostic ability significantly enhanced **reactive leadership shifts** during unanticipated events, underscoring the importance of in-the-moment adaptation.

The convergence of these results suggests that leadership in multicultural oil and gas teams is most effective when underpinned by **a triad of competencies**—cognitive understanding, social perceptiveness, and behavioural flexibility—applied through accurate prediction, timely diagnosis, and agile behaviour shifts.

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