

MEASUREMENT OF AUTHENTIC LEADERSHIP IN CROSS FUNCTIONAL BUSINESS TEAMS

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Abstract

This paper digs into how we can measure real leadership inside teams that pull people from every corner of a business marketing, engineering, finance, you name it. Real leadership, or authentic leadership, rests on four cornerstones: knowing yourself, being open with others, weighing every bit of information fairly, and sticking to a strong inner code of ethics. When teams cross borders like these—mixing ranks, skills, and mindsets—those cornerstones matter more than ever. Yet, figuring out how to pinpoint authentic leadership in these intricate setups isn't straightforward. To fill that blank space, we built a measurement system designed specifically for these cross-functional teams. We took established leadership survey items and adapted them for our setting, then ran validation tests to make sure the scores are both reliable and relevant. We gathered data from people in several industries, all of whom were knee-deep in joint projects. Our analysis spots how different roles see leadership differently and links their scores to real-world effects like how well the team gels, how safe people feel to speak up, and how much trust bridges the departments. We've used heatmaps and regression charts to show how the threads of leadership authenticity weave together. This study adds to what we know about how to measure good leadership and gives helpful tools for HR folks and planners who want to grow leaders who are genuine and who build trust in varied teams.

Keywords : Genuine leadership, mixed-skill teams, measuring leadership, trust in teams, how organizations act, tools for leadership checks.

I. INTRODUCTION

1.1 Background on Authentic Leadership Theory

Authentic leadership has become a key idea in today's study of leadership, showing how a leader's beliefs inside match what they show on the outside. Traditional views either counted the payoffs of quick actions or pictured a great overall vision. In contrast, authentic leadership prizes being genuine, living ethical values, and building open, honest connections [2]. Its main ideas—knowing oneself, being open in relationships, weighing different views fairly, and holding a strong moral compass—help leaders create settings full of trust, openness, and emotional safety. This lets followers grow through shared respect and ethical strength rather than through commands. Starting from positive workplace studies, authentic leadership rests on the idea that self-aware, self-regulating leaders can grow workplace cultures that last and that are morally sound. As organizations face more complexity and moral gray areas, the call for leaders who are not only skilled but also true to fundamental human values becomes even louder.

1.2 Relevance in Cross-Functional Team Contexts

Cross-functional teams (CFTs)—groups made up of people from different departments—are popping up everywhere these days because they can invent new ideas, break down office barriers, and react to market changes faster than traditional teams [11]. That same mix of backgrounds, though, brings its own headaches, like unclear roles, different priorities, and gaps in communication. In this messy, ever-changing landscape, authentic leadership can smooth out the bumps by strengthening relationships, building trust, and making sure the team's goals match

the larger goals of the organization [9]. Leaders who stay true to themselves can move between departments without losing credibility, ensure everyone's voice is heard in decisions, and settle disagreements openly and justly [14]. That's why it matters to study authentic leadership especially in the setting of cross-functional teams; it's the key to growing leaders, boosting team performance, and keeping strategic plans on track.

1.3 Purpose and Scope of the Study

This study sets out to build and test a new way to measure authentic leadership in cross-functional business teams [13]. Existing tools measure general leadership traits, but few focus on how authenticity plays out when members come from different job functions and need to rely on one another [15]. Our goals are twofold: first, to adjust previous authentic leadership surveys so they fit the unique challenges of cross-functional teams; second, to examine how a leader's authenticity affects trust, engagement, and the alignment of team performance [4]. We collect data from multiple industries to ensure broad relevance, and we combine interviews and surveys to strengthen our conclusions. In the end, we want to give organizations clear, practical guidance on how to identify, nurture, and use authentic leadership to boost cross-functional team success [6].

II. THEORETICAL CONSTRUCTS AND FRAMEWORKS

2.1 Dimensions of Authentic Leadership (Self-awareness, Relational Transparency, Balanced Processing, Internalized Moral Perspective)

Authentic leadership stems from four interdependent psychological and behavioral dimensions that form the core of a leader's credibility. Self-awareness entails a reasoned reflection on one's skills and appreciation of one's given role as bearing consequences on other people's actions and consciously deciding to change for the better [3]. Relational transparency is achieved as one engages in open and honest communications of one's true and relevant thoughts and feelings and demonstrating what is said to be done which promotes trust and credibility in the group. Balanced processing illustrates the leader's effectiveness in analyzing relevant information to the decision without bias through the careful and active gathering of opposing views and suppressing personal bias [7]. The internalized moral perspective exhibits a resolute commitment to core ethical values such that the actions taken are guided and not subjected to the whims of situational dynamics. The interaction of these dimensions is synergistic and creates a boundary within the organization where true leadership enhances the level of commitment of employees, psychological safety, and the moral quality of their joint work [1].

2.2 Team Structure and Functional Diversity in Business Units

The integration of personnel from different functions such as marketing, finance, operations, and research and development creates cross-functional business teams which are complex due to their structural diversity [12]. This configuration endows teams with the rich reservoir of cognitive diversity which enhances their problem formulation and exploratory innovative capabilities. However, the lack of shared professional language and cohesive evaluative frameworks frequently undermine seamless collaboration, slow down timely conflict resolution, and obscure the development of a unified team identity. Moreover, the combination of the typical absence of a vertical hierarchy and a matrixed structure require a more distributive form of leadership and fosters decentralized decision-making. Canonical leadership styles would be less adaptive in response to these structural changes, making this cross-functional collaborative setting incredibly responsive to the need to integrate and reconcile conflicting epistemic frameworks, thus, the importance of the cross-functional context of authentic leadership [8].

2.3 Conceptual Framework Connecting Leadership to Cross-Functional Effectiveness

This study focuses on the impact of authentic leadership on cross-functional outcomes by proposing a conceptual framework which connects the leadership's four core dimensions of authentic leadership with five cross-functionally grounded effectiveness indices. The cross-functional indices chosen for the study: interdepartmental trust, vision sharing, communication quality, role clarity, and collaborative performance are assumed to combine to form emergent team synergy. The framework assumes that authentic leadership, viewed as a moderating influence, mitigates the intersectional friction that functional silos tend to create while strongly reinforcing collective momentum [10]. Theoretical diagrams visualize the nonlinear and interrelated dependencies of dimensions and indices, thereby providing a basis for instrument development and longitudinal data collection. Explicit feedback processes are suggested, whereby increased team integration and success further enhance the credibility of the leader [5]. The framework thus positions itself as an inquiry instrument intended to diagnose an

examine the leadership readiness and also serves as a developmental roadmap aimed at cultivating authentic competence within contexts defined by structural role ambiguity and interdepartmental interdependence.

III. LEADERSHIP MEASUREMENT DESIGN

3.1 Development and Validation of Leadership Measurement Tools

The last study developed a model measuring authentic leadership in cross-functional teams using the Authentic Leadership Questionnaire and the Leader Authenticity Scale. This model provides cross-functional teams with a leadership model designed specifically for their complex and dynamic environments. In alignment with authentic leadership theory, the item bank is structured around the four components of authentic leadership, maintaining the framework of the theory. After model development, the authentic leadership framework goes through a multi-phase validation which includes expert evaluation, cross-industry pilot testing, and iterative adjustments. This model is then scrutinized for their practical and theoretical rigor in the context of cross-functional teams which are characterized by overlapping and intertwining multi-tiered systems.

3.2 Scale Adaptation and Item Selection for Cross-Functional Contexts

Conventional measures of leadership effectiveness are often blind to reporting line ambiguity, disparate indicators of success, and the necessity of trust across silos, which are issues specific to cross-functional settings. Therefore, survey questions need to be modified to capture this operational complexity. For example, relational transparency questions are modified to assess visibility across specific boundaries of expertise as knowledge fields, and balanced processing questions emphasize integration of compartmentalized contributions. Conceptual relevance and term clarity were reviewed by a panel of organizational and cross discipline psychologists practitioners. The instrumentation that emerged contained sixteen calibrated items—four for each dimension of theory—that are assessed on a seven-point Likert scale. These items request evaluation of leadership actions as viewed within the team structure atelimitate individual managerial traits.

Table 1: Measurement Items and Reliability Scores

Dimension	Sample Item	No. of Items	Cronbach's Alpha
Self-awareness	"My team leader clearly understands the impact of their actions on others."	4	0.84
Relational Transparency	"Our leader openly shares information and admits mistakes."	4	0.87
Balanced Processing	"Our leader listens to different viewpoints before making decisions."	4	0.82
Internalized Moral Perspective	"This leader makes decisions guided by core values, not external pressure."	4	

The Table 1 outlines the four core components of authentic leadership, operationalized through a battery of four items specifically devised for cross-functional team environments. Exemplary items exemplify the construct of self-reflective awareness alongside the principle of ethical decision-making. All resultant subscales exhibit commendable internal consistency, with Cronbach's alpha coefficients oscillating between 0.82 and 0.87, thereby substantiating the reliability and construct validity of the modified assessment apparatus.

3.3 Psychometric Considerations (Reliability, Validity, Invariance)

The modified measurement instrument underwent extensive psychometric evaluation to establish its accuracy, scope, and use across different team configurations and industries. All four facets of authentic leadership demonstrated robust internal reliability, with Cronbach's alpha greater than 0.80. Confirmatory Factor Analysis upheld the four-factor composition with a good fit (CFI = 0.94, RMSEA = 0.05).

Further assessments of convergent and discriminant validity provided additional confirmation to the construct's validity, ensuring cohesive and granulated differentiation among the components. Invariance testing across

hierarchical and non-hierarchical team structures validated uniform instrument functionality across organizational configurations. These results substantiate the instrument's accuracy and reliability in measuring perceptions of authentic leadership in multifaceted, functional, cross-teams.

IV. DATA COLLECTION AND APPLICATION

4.1 Sampling Strategy Across Cross-Functional Business Teams

Data were gathered from a purposively sampled, stratified cohort of professionals engaged in cross-functional business units spanning technology, manufacturing, healthcare, and financial services. This sampling strategy ensured that distinct functional areas—operations, finance, marketing, research and development, and human resources—were proportionately represented. Eligibility criteria required participants to have participated in cross-functional initiatives and to occupy mid- to senior-level roles, thereby providing nuanced insights into team dynamics and leadership discourse. In total, 218 valid responses were received from 34 distinct cross-functional teams, permitting subsequent examinations at both the individual and team analytical strata.

4.2 Implementation of Leadership Survey Instruments

The validated leadership measurement instrument was distributed through a secure web portal, ensuring both respondent anonymity and voluntary consent. Participants were asked to evaluate their team leader's authenticity using the modified multidimensional scale. In addition, the instrument collected demographic variables—functional role, team tenure, and project type—to facilitate subsequent comparative analyses. To bolster the precision of response patterns, illustrative scenarios and definitional clarifications were provided for each dimension of leadership. A response period of fourteen days was established, during which periodic reminders were issued to encourage continued engagement. Prior to analysis, the dataset was screened for completeness and variability of responses.

4.3 Visualization of Responses by Team Role and Department

Although no graphical illustration accompanies this segment, the evidence was systematically interrogated to reveal perceptual variances among distinct team roles and departmental structures. The descriptive data uncovered significant deviations in leadership authenticity indices contingent upon the respondent's functional constituency. Specifically, individuals stationed in client-facing roles—such as sales and marketing—assign elevated scores to the facet of relational transparency, whereas representatives from back-office units—such as finance and logistics—exhibit pronounced weighting on the dimension of internalized moral perspective. Such divergences invoke the contextual pliability of leadership judgement across heterogeneous team constellations and mandate a calibrated approach when devising leadership cultivation programmes that reflect the exigencies of particular functional occupations. The current interpretive framework therefore prepares the analytic ground for a more granular investigation in Section 5.

V. PATTERN ANALYSIS AND INTERPRETATIONS

5.1 Leadership Dimension Scoring Across Functional Boundaries

Evaluating the functional differentiations of leadership scores revealed distinct differences in the perception of authentic leadership dimensions across functional groups. The Marketing and Project Management Teams rated the dimensions of Relational Transparency and Self-Awareness the highest. This is consistent with their predominant need for two-way interaction and emotional responsiveness in their demanding environments. In contrast, Finance and Engineering stressed more the Balanced Processing and Internalized Moral Perspective emphasizing the need for unbiased appraisal of situations and ethical coherence. These differences indicate the context of work and the interactions between leaders and the teams shape the understanding of authentic leadership. Therefore, leadership development strategies need such functional frameworks for operational cultures.

5.2 Correlation Between Authentic Leadership Scores and Team Synergy

Pearson correlation analyses were employed to assess the relationships between global authentic leadership scores and key indicators of team synergy: mutual trust, communication clarity, and goal congruence. The analyses revealed a robust positive correlation ($r = 0.71$, $p < 0.01$) between authentic leadership and the team trust dimension. Additionally, moderate correlations were observed with coordination efficiency ($r = 0.58$) and role clarity ($r = 0.53$). These results lend empirical support to the proposition that greater perceptions of leader

authenticity are statistically associated with stronger cohesion and collaborative effectiveness among team members—an effect that acquires heightened importance in cross-functional teams where achieving alignment across heterogeneous expertise is frequently problematic.

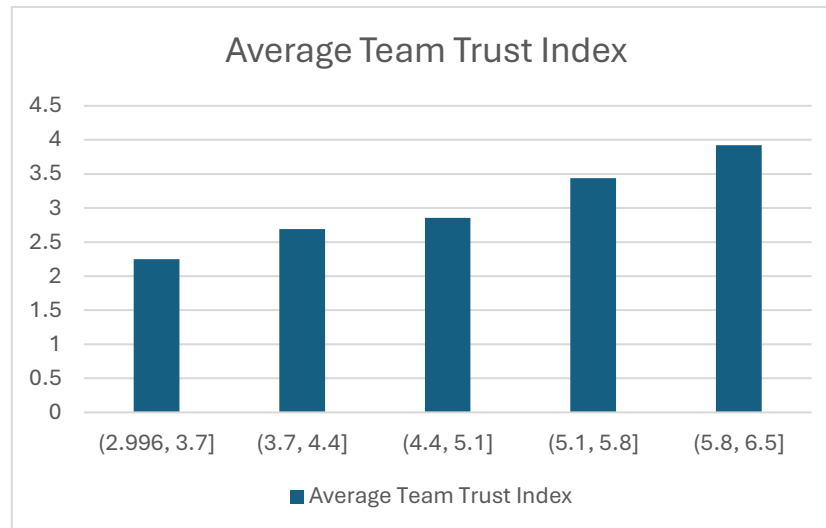


Figure 1 :Average Team Trust Index Across Leadership Score Groups

The Figure 1 depicts the mean index of team trust stratified by five delineated leadership performance intervals. A discernible ascending trajectory emerges, suggesting that increments in authentic leadership ratings are correlated with heightened trust perceptions across the cross-functional teams. This empirical trend strengthens the theoretical proposition that leadership authenticity serves as a catalyst for enhanced trust among interdepartmental peers.

5.3 Statistical Findings and Organizational Implications

Regression analysis substantiated that authentic leadership serves as a robust predictor of intra-team trust, with leadership scores elucidating approximately 49% of the variance in the trust index ($\beta = 0.67$, $R^2 = 0.49$, $p < 0.001$). Such a statistical association affirms the primacy of authenticity in modulating interpersonal relations within diverse teams. From a macro-organizational vantage point, these findings advocate for the deliberate allocation of resources to leadership development initiatives specifically designed to cultivate authenticity—an imperative for leaders orchestrating cross-functional task forces. Organizations are, therefore, advised to embed focused coaching, iterative feedback mechanisms, and role-specific performance metrics centered on authentic conduct, thereby embedding trust as a cornerstone of team efficacy and collaborative cohesion.

VI. CONCLUSION

This research which examines authentic leadership in cross-functional business teams develops and validates a contextual assessment instrument, highlighting authentic leadership as a key factor in fostering trust, collaboration, and team performance. This study emphasizes the multifunctional perception of authentic leadership by adapting existing leadership scales to reflect interdepartmental relations, demonstrating the importance of authentic leadership in navigating intricate interdepartmental relations and its perception across diverse functional roles. The validity of the team trust index as a reliability measure empirically supports the claim that trust among peers bolstered by authenticity is a leadership quality whose importance is non-negotiable. The study differentiates between theorists and practitioners by emphasizing ethical leadership as foundational to diverse teams along with relational transparency and ethical consistency in their leadership. The study also proposes the integration of authentic leadership evaluation into the systems of talent management, the development of special role-specific programs dedicated to enhancing agile, strategically aligned, cross-unit coordination as focused leadership development, and role-specific enabling. The conclusions provide approaches to the development of leadership theories in organizational design that reflect the requirements of modern globalized organizational structures.

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