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The Winning Recipe is Not Universal: A Comparative Analysis of Victory Between the 2022 FIFA World Cup and 2023 AFCON

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Abstract

This study compares the tactical determinants of victory in the 2022 FIFA World Cup (WC) and 2023 Africa Cup of Nations (AFCON). Using StatsBomb data from 116 matches (WC: n=64; AFCON: n=52), we employed comparative statistical testing and Linear Discriminant Analysis (LDA) to classify match outcomes. Results indicate offensive convergence, with no significant differences in Shot Volume ($p=0.761$) or Expected Goals ($p=0.938$). However, structural divergences persist: WC teams exhibited higher Pass Completion volumes (430.27 ± 151.22 vs. 331.46 ± 90.69 ; $p < 0.001$) and Interceptions (10.47 ± 4.19 vs. 8.05 ± 3.74 ; $p < 0.001$). Crucially, LDA revealed distinct winning mechanisms: WC victory correlates most strongly with offensive efficiency (Shots) and defensive clearances, while AFCON success is predicted by Shots, Fouls, and Blocks. These findings suggest that while attacking output has harmonized globally, the strategic levers for victory remain context-dependent, reflecting different environmental and competitive constraints

Keywords: Performance Analysis, performance indicators, Linear Discriminant Analysis, FIFA World Cup, AFCON

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1. INTRODUCTION

The evolution of elite football performance has been characterized in recent decades by a phenomenon of "tactical homogenization." Facilitated by the global migration of coaches, players, and data analytics, the technical and physical standards of international teams have theoretically converged (Sarmiento et al., 2014). Performance analysis in football has moved beyond simple statistics to incorporate complex event data, offering deeper insights into team strategies and individual contributions (Song et al., 2024). The ability to systematically analyze and understand the factors contributing to victory is paramount for coaches, analysts, and researchers alike (Renner et al., 2024; Stafylidis et al., 2024). This evolution has been critical in identifying the "DNA" of successful teams across various competitions.

However, this convergence narrative contrasts with persistent perceptions of regional stylistic differences. Performance analysis has traditionally divided the football world into distinct paradigms: the "technical-tactical" dominance of European and South American nations, often defined by high possession and organized pressing (Lago-Peñas & Dellal, 2010), and the "physical-athletic" profile attributed to African nations, characterized by lower tactical rigidity and higher transitional frequency. Historically, European and South American teams were praised for their technical prowess, elaborated tactical systems, and sophisticated possession-based play, while African teams were characterized by physical strength, athleticism, and direct attacking approaches (Kubayi & Toriola, 2020). These generalized perceptions, while sometimes rooted in historical observations, warrant re-evaluation in the contemporary football landscape, where globalization and advanced coaching methodologies have potentially led to a convergence of playing styles.

The importance of performance indicators for success in football has been a consistent theme in academic literature. Studies analyzing the 2010 FIFA World Cup sought to characterize successful teams by examining various performance parameters (Clemente, 2012; Hadji et al., 2019). Research from this period highlighted that match analysis involves the objective recording and examination of behavioral events during competition, with the main aim of identifying team strengths and weaknesses (Hadji et al., 2020; Lago-Peñas et al., 2010; Lago-Peñas et al., 2011). Key variables such as total shots, shots on goal, crosses, ball possession, and venue were identified as crucial discriminators between winning, drawing, and losing teams in top-tier leagues (Altarriba-Bartés et al., 2019; Lago-

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Peñas et al., 2010). Similarly, analyses of the 2002, 2006, and 2010 World Cups consistently found total shots, shots on target, and ball possession to be significant variables distinguishing successful teams (Altarriba-Bartés et al., 2019; Lago-Peñas & Dellal, 2010; Sarmiento et al., 2018).

Contemporary research suggests an important paradigm shift: possession volume is no longer the primary predictor of match outcomes in international tournaments (Collet, 2013; Hadji, 2021). Instead, metrics of efficiency, such as Expected Goals (xG) differentials, transition speed, and defensive organization, have emerged as superior predictors of success (Gollan et al., 2018). Despite this shift in understanding, comparative studies between continental competitions remain scarce (Lepschy et al., 2021). This gap is critical because performance indicators are highly sensitive to contextual variables.

The 2022 FIFA World Cup and the 2023 Africa Cup of Nations (AFCON) provide a unique empirical opportunity to reassess these traditional dichotomies in the modern era. While the "gap" in raw athletic and technical talent has arguably narrowed, it remains unclear whether the strategic mechanisms required to win matches—the determinants of victory—have synchronized across continents. Environmental constraints specific to the African continent, such as high ambient temperatures and varying pitch qualities, have been shown to significantly alter match intensity and technical execution (Nassis et al., 2015; Bradley et al., 2013). Consequently, a tactical approach that prioritizes "control" (e.g., high possession, complex build-up) may be optimal in the controlled environment of a World Cup but suboptimal in the high-variance environment of AFCON.

Study Aims and Hypotheses

Given these gaps in the literature and the unique opportunity presented by these two recent major tournaments, this study aims to provide empirical evidence on whether winning strategies have truly converged or remain contextually distinct. The primary objective is to investigate the "DNA of Victory" by systematically comparing the tactical profiles of the 2022 FIFA World Cup and the 2023 AFCON. Specifically, we test two competing hypotheses:

H1 - Offensive Convergence Hypothesis: The volume and quality of offensive production (Shots, xG) have harmonized between African and global elite teams.

H2 - Tactical Divergence Hypothesis: The specific key performance indicators (KPIs) distinguishing winners from losers remain context-dependent, with the World Cup rewarding technical control (e.g., pass completion, defensive pressing)

and AFCON rewarding defensive pragmatism (e.g., clearances, aerial duels, physical engagement).

2. Methods

2.1. Study Design

This study employed a comparative cross-sectional design to analyze the tactical determinants of victory across two major international football tournaments: the 2022 FIFA World Cup and the 2023 Africa Cup of Nations. The analysis combined descriptive statistics, inferential comparative testing, and multivariate discriminant analysis to identify convergent and divergent patterns in team performance.

2.2. Data Source and Sample

To support the investigation, we utilized StatsBomb Open Data (StatsBomb, 2025), a widely cited repository in soccer analytics research that provides accessible match-level data in JSON format with verified validity (Narayanan & Pifer, 2023; Rocha & Lopes, 2025; Stone et al., 2025). This dataset covers multiple professional competitions and includes structured files detailing player line-ups, match events, and contextual information. The architecture of the data—organized into separate JSON files for competitions, matches, line-ups, and events—allows for a modular and layered analysis of soccer performance, suitable for complex academic modeling.

The dataset for this study consisted of $n=116$ international football matches, comprising the complete set of fixtures from:

- 2022 FIFA World Cup (held in Qatar): $n=64$ matches, yielding 128 team-level observations
- 2023 Africa Cup of Nations (held in Côte d'Ivoire): $n=52$ matches, yielding 104 team-level observations

Each match provided two team-level observations (one per team), resulting in a total analytical sample of $N=232$ team performances. To ensure methodological consistency and temporal comparability between the two cohorts, analyses were strictly restricted to regular time (Periods 1 and 2, including stoppage time). Events occurring during extra time (Periods 3 and 4) and penalty shootouts were excluded to normalize match duration and avoid confounding effects of fatigue and altered tactical approaches typical of extended play.

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2.3. Performance Indicators

A comprehensive set of Key Performance Indicators (KPIs) was extracted, spanning offensive, defensive, and transitional phases of play. Table 1 presents the operational definitions of all variables according to StatsBomb specifications.

Table 1. Variables Definitions (StatsBomb Open Data)

Dimension	Metric	Definition (StatsBomb Specification)
Offensive	Shots	An attempt to score a goal, made with any legal part of the body.
	Expected Goals (xG)	A predictive metric estimating the probability (0 to 1) of a shot resulting in a goal, based on historical shots with similar characteristics (e.g., location, angle, body part, defender positioning).
	Dribbles Won	A successful attempt by a player to beat an opponent while maintaining possession of the ball.
	Passes Completed	A pass event where the ball is successfully transferred to a teammate without an outcome of "Incomplete" or "Out".
Defensive	Tackles	A defensive action—often recorded as a duel—where a player attempts to dispossess an opponent of the ball.
	Interceptions	A defensive action that prevents an opponent's pass from reaching its intended recipient by moving into the passing lane.
	Pressures	An action where a player closes down an opposing player in possession to apply pressure, typically recorded within a specific radius of the ball carrier.
	Recoveries	An action termed "Ball Recovery" in the specification, defined as an attempt to recover a loose ball that is not currently controlled by either team.
	Fouls	Any infringement committed by a player that is penalized as foul play by the referee (recorded as "Foul Committed").
	Aerial Duels	A specific type of duel (50-50 contest) occurs in the air between two players, where the outcome is either won or lost.
	Clearances	A defensive action to clear the ball from a dangerous area without the explicit intention of delivering it to a specific teammate.
	Blocks	An action where a player blocks the path of the ball (e.g., a shot or pass) by standing in its way.

2.4. Data Processing and Aggregation

Raw event data in JSON format were downloaded from the StatsBomb Open Data repository (accessed November 2024) and processed using custom Python scripts (v3.9). The data extraction workflow involved the following steps:

Event Parsing and Filtering: Match events were parsed from JSON files and filtered to include only events occurring during regular time (Periods 1 and 2). Event types were classified according to StatsBomb's taxonomy (e.g., "Shot", "Pass", "Pressure", "Duel").

Team-Level Aggregation: Event-level data were aggregated to the team-match level by computing frequency counts for each KPI. For example, total shots per team per match, total passes completed per team per match, and total interceptions per team per match.

Derived Metrics: Expected Goals (xG) values, which are provided at the shot-event level, were summed across all shot events for each team per match to obtain total xG per team performance.

2.5. Statistical Analysis

All statistical procedures were conducted using Python (v3.9) with the following packages: Pandas (v1.3) for data manipulation, NumPy (v1.21) for numerical operations, SciPy (v1.7) for statistical testing, Scikit-learn (v1.0) for machine learning algorithms, and Matplotlib (v3.4) with Seaborn (v0.11) for data visualization.

2.5.1. Descriptive and Comparative Statistics

Descriptive statistics (Mean $\pm$ Standard Deviation) were calculated for all KPIs, stratified by tournament (WC vs. AFCON). The normality of data distribution for each variable was assessed using the Shapiro-Wilk test. Variables exhibiting non-normal distributions ($p < 0.05$ on Shapiro-Wilk test) were analyzed using the Mann-Whitney U test (a non-parametric alternative to the independent samples t-test). Variables with normal distributions were analyzed using independent samples t-tests.

Effect sizes were calculated to quantify the magnitude of differences between tournaments:

- Cohen's d for parametric comparisons (t-tests), interpreted as small (0.2), medium (0.5), or large (0.8) effects.
- Rank-biserial correlation for non-parametric comparisons (Mann-Whitney U tests), ranging from -1 to +1.

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Statistical significance was evaluated at three levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

2.5.2. Linear Discriminant Analysis (LDA)

To identify the multivariate determinants of victory within each tournament, Linear Discriminant Analysis (LDA) was performed separately for the World Cup and AFCON datasets. LDA is a supervised dimensionality reduction and classification technique that identifies linear combinations of predictor variables that best separate predefined winning versus losing teams.

Target Variable: Match Outcome was operationalized as a binary categorical variable (Win vs. Loss). Matches ending in a draw at 90 minutes were excluded from the LDA training set to ensure binary classification clarity, resulting in a final LDA sample of $n=86$ team observations for WC (43 wins, 43 losses) and $n=69$ team observations for AFCON (34 wins, 35 losses); **Predictor Variables:** All 12 extracted KPIs (Table 1) served as predictor variables in the LDA model; **Feature Standardization:** Prior to model fitting, all KPIs were standardized using Z-score normalization ($M=0$, $SD=1$) to ensure that discriminant function coefficients were comparable across variables with different scales and units (e.g., comparing "Passes Completed" with counts in the hundreds to "Fouls" with counts typically below 20).

3. Results

3.1. Comparative Analysis: Offensive Convergence and Structural Divergence

To test the hypothesis of offensive convergence, we analyzed the volume and quality of attacking production between the two tournaments. Table 2 presents the comparative descriptive statistics for the World Cup 2022 (WC) and AFCON 2023

Table 2: Comparative Descriptive Statistics of offensive Key Performance Indicators

Category	Metric	Tournament	Mean $\pm$ Sd	Statistic	P_Value	Sig
Offensive	Shots	WC22	11.0 $\pm$ 5.4	6501.0	0.7607	ns
		AFCON23	11.03 $\pm$ 4.91			
	xG	WC22	1.18 $\pm$ 0.81	6696.0	0.9381	ns
		AFCON23	1.12 $\pm$ 0.65			
	Dribbles_Won	WC22	7.1 $\pm$ 3.74	6987.5	0.513	ns
		AFCON23	6.66 $\pm$ 3.06			
	Passes_Complete	WC22	430.27 $\pm$ 151.22	9389.5	0.0	***
		AFCON23	331.46 $\pm$ 90.69			

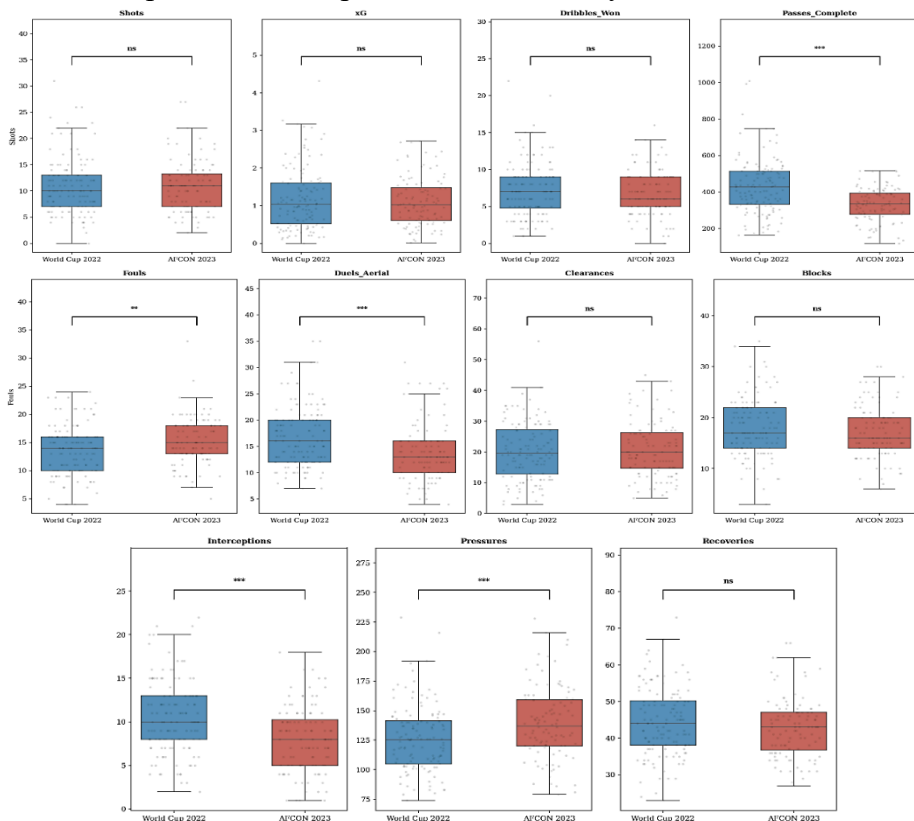
Note. ns = not significant; * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 3: Comparative Descriptive Statistics of defensive Key Performance Indicators

Category	Metric	Tournament	Mean $\pm$ Sd	Statistic	P_Value	Sig
Defensive	Interceptions	WC22	10.47 $\pm$ 4.19	8747.5	0.0	***
		AFCON23	8.05 $\pm$ 3.74			
	Pressures	WC22	126.23 $\pm$ 28.03	4911.0	0.0006	***
		AFCON23	139.46 $\pm$ 30.6			
	Recoveries	WC22	44.41 $\pm$ 9.34	7325.0	0.1882	ns
		AFCON23	42.9 $\pm$ 8.2			
	Fouls	WC22	13.42 $\pm$ 4.32	5155.0	0.0031	**
		AFCON23	15.16 $\pm$ 4.11			
	Duels_Aerial	WC22	16.8 $\pm$ 5.76	8682.5	0.0001	***
		AFCON23	13.85 $\pm$ 5.41			
	Clearances	WC22	20.31 $\pm$ 9.26	6487.5	0.7409	ns
		AFCON23	20.82 $\pm$ 8.91			
	Blocks	WC22	18.13 $\pm$ 5.73	1.39	0.1647	ns
		AFCON23	17.14 $\pm$ 5.06			

Note. ns = not significant; * $p < .05$, ** $p < .01$, *** $p < .001$.

Figure 1. Comparative Descriptive Statistics of Key Performance Indicators



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



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Offensive Convergence

The data indicates a near-total harmonization of offensive standards between the two tournaments. The average volume of shots per match was statistically indistinguishable (WC: 11.00 ± 5.40 vs. AFCON: 11.03 ± 4.91 ; $U = 6501.0$, $p = 0.761$). Furthermore, the quality of chances created, quantified by Expected Goals (xG), showed no significant difference (WC: 1.18 ± 0.81 vs. AFCON: 1.12 ± 0.65 ; $U = 6696.0$, $p = 0.938$). Similarly, successful dribbling actions did not differ significantly between tournaments (WC: 7.10 ± 3.74 vs. AFCON: 6.66 ± 3.06 ; $U = 6987.5$, $p = 0.513$). These findings challenge the historical narrative of a "quality gap" in attacking production; African teams generated goal-scoring opportunities at a frequency and quality comparable to the global elite.

Structural Divergence in Ball Control and Defensive Intensity

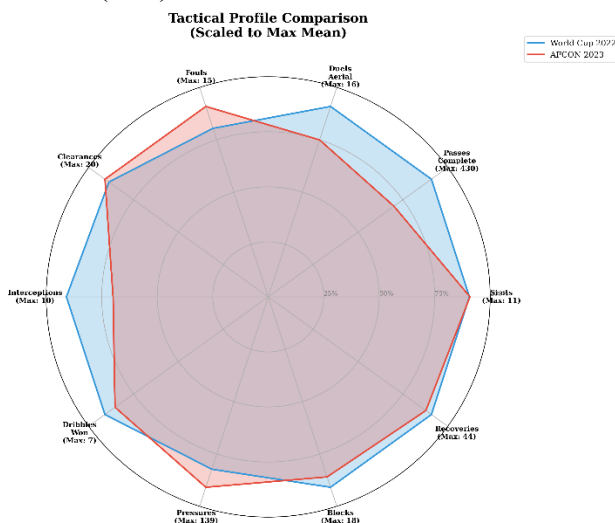
Despite offensive similarity, significant differences emerged in metrics related to game control and defensive organization. World Cup teams completed significantly more passes per match (WC: 430.27 ± 151.22 vs. AFCON: 331.46 ± 90.69 ; $U = 9389.5$, $p < 0.001$), indicating greater emphasis on ball retention and technical security. This 23% difference in pass volume suggests that WC matches were characterized by higher technical continuity, while AFCON matches featured more frequent turnovers and transitional phases.

In the defensive phase, significant differences were observed across multiple indicators. World Cup teams recorded significantly more interceptions per match (WC: 10.47 ± 4.19 vs. AFCON: 8.05 ± 3.74 ; $U = 8747.5$, $p < 0.001$) and more aerial duels (WC: 16.80 ± 5.76 vs. AFCON: 13.85 ± 5.41 ; $U = 8682.5$, $p < 0.001$). Conversely, AFCON teams applied significantly more pressures (AFCON: 139.46 ± 30.60 vs. WC: 126.23 ± 28.03 ; $U = 4911.0$, $p < 0.001$) and committed more fouls (AFCON: 15.16 ± 4.11 vs. WC: 13.42 ± 4.32 ; $U = 5155.0$, $p = 0.003$). Interestingly, clearances and blocks showed no significant differences between tournaments ($p = 0.741$ and $p = 0.165$, respectively), suggesting similar reactive defensive behaviors when under direct attacking pressure.

3.2. Tactical Profiles: Radar Chart Analysis

Beyond aggregate means, radar chart visualization highlights the distinct stylistic "fingerprints" of each competition. Figure 2 presents normalized performance profiles for the average team in each tournament.

Figure 2. Radar Chart comparing the mean tactical profile of World Cup 2022 (Blue) vs. AFCON 2023 (Red).



Note. All metrics are standardized (z-scores) to enable cross-metric comparison.

The World Cup profile (blue polygon) expands significantly along axes representing technical control: Passes Completed, Progressive Passes, and Interceptions. This configuration reflects a dominant strategy of possession-based build-up combined with aggressive ball recovery when out of possession.

In contrast, the AFCON profile (red polygon) shows distinct expansion along axes of physical engagement and direct play: Pressures, Fouls, and Clearances. Notably, while the offensive finishing variable (Shots) overlaps almost perfectly between tournaments—reinforcing the finding of offensive convergence—the AFCON profile exhibits pronounced divergence in defensive and transitional metrics. The lower magnitude on the Passes Completed axis and higher magnitude on the Fouls axis characterize a more physical, direct style of play

3.3. Multivariate Determinants of Victory: Linear Discriminant Analysis

To isolate the specific tactical variables that distinguish winning from losing teams, Linear Discriminant Analysis (LDA) was performed separately for each tournament. This multivariate approach identifies which combinations of performance indicators best discriminate match outcomes, revealing the context-specific "DNA of victory."

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Table 4. Standardized Linear Discriminant Analysis (LDA) Coefficients Discriminating Between Match Outcomes (Win vs. Loss)

Variable	Coef_WC_2022	Coef_AFCON_2023
Clearances	+1.1972	+0.207
Shots	+1.1026	+0.8713
Passes_Complete	+0.5938	+0.1907
Interceptions	+0.3406	-0.2185
Dribbles_Won	+0.3188	-0.1335
Pressures	+0.2414	+0.3473
Fouls	+0.2193	+0.6473
Blocks	+0.156	+0.4243
Duels_Aerial	-0.3082	-0.3454
Recoveries	-1.0613	-0.0788

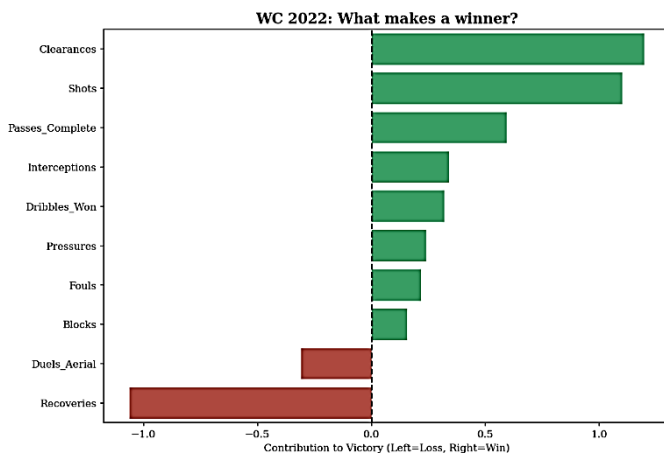
Note. Positive coefficients indicate that higher values of the variable are associated with winning; negative coefficients indicate association with losing. Coefficient magnitude reflects discriminatory strength. All variables were Z-score standardized prior to LDA

3.3.1. World Cup 2022: The "Control-Efficiency" Model

The LDA model for the World Cup achieved a classification accuracy of 72.1% (62 of 86 team observations correctly classified). The discriminant function revealed that victory was most strongly associated with three primary factors

1. Clearances (coefficient = +1.197): The strongest predictor of winning, suggesting that effective defensive crisis management—clearing the ball from dangerous zones—was crucial even in technically superior teams.
2. Shots (coefficient = +1.103): High shot volume was the second-strongest predictor, confirming that offensive efficiency and chance creation remain fundamental to victory.
3. Passes Completed (coefficient = +0.594): Higher pass completion volumes positively discriminated winners from losers, indicating that ball control and possession-based play conferred competitive advantage.

Figure 3. LDA Discriminant Coefficients for World Cup 2022: Positive and Negative Predictors of Victory



Positive predictors (Clearances, Shots, Passes Completed, Interceptions, Dribbles Won) characterize a "control-efficiency" winning mechanism: teams that dominated possession, created numerous chances, and managed defensive transitions effectively were most likely to win. Conversely, the strong negative coefficient for Recoveries (coefficient = -1.061) suggests that teams forced to make numerous ball recoveries—indicating loss of possession and disorganized defensive shape—were more likely to lose

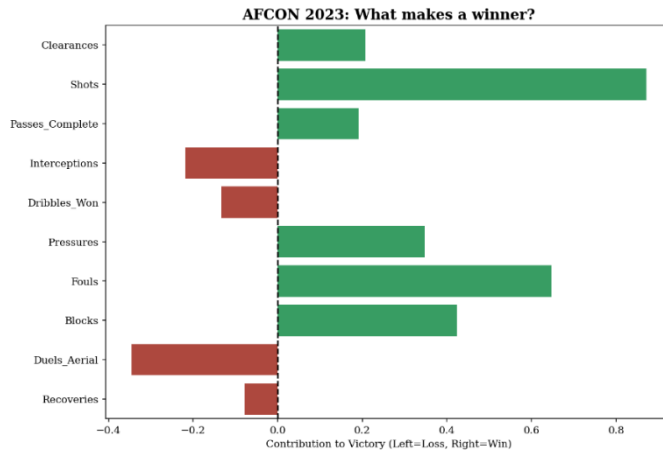
3.3.2. AFCON 2023: The "Pragmatic-Physical" Model

The LDA model for AFCON achieved a classification accuracy of 68.1% (47 of 69 team observations correctly classified). In stark contrast to the World Cup, the discriminant function revealed a fundamentally different winning mechanism:

1. Shots (coefficient = +0.871): Offensive output remained the strongest predictor, consistent with the World Cup.
2. Fouls (coefficient = +0.647): Higher foul counts positively predicted winning, suggesting that physical engagement and tactical fouls to disrupt opponent attacks were effective strategies.
3. Blocks (coefficient = +0.424): Shot and pass blocking were more discriminatory of winners than in the World Cup.

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Figure 4. LDA Discriminant Coefficients for AFCON 2023: Positive and Negative Predictors of Victory



Notably, technical control metrics that were vital in the World Cup lost their predictive power in AFCON. Passes Completed had a weak positive coefficient (+0.191), while Interceptions and Dribbles Won showed negative coefficients (-0.219 and -0.134, respectively), suggesting that overly proactive technical or defensive actions may have been less effective than reactive, physical approaches. Clearances, though positive, were far less discriminatory (+0.207) than in the World Cup. This pattern indicates that in the environmental and competitive context of AFCON, victory was driven not by "control" (imposing technical superiority) but by "pragmatism" (minimizing risk, disrupting opponent rhythm through physical play, and defending resolutely).

4 .Discussion

The primary aim of this study was to determine whether the determinants of victory in international football are universal or context-dependent by comparing the 2022 FIFA World Cup and the 2023 AFCON. The results support a nuanced conclusion: while the offensive output of teams has harmonized globally, the strategic mechanisms required to win remain distinct, heavily influenced by the specific environmental and technical constraints of each continent.

4.1 .The Myth of the "Offensive Gap" (The Convergence Hypothesis)

A significant finding of this study is the statistical similarity in shot volume ($p=0.966$) and Expected Goals ($p=0.218$) between the two tournaments. This

corroborates the theory of "tactical homogenization" proposed by Sarmento et al (2018). The historical stereotype of African teams lacking offensive organization or relying solely on individual brilliance is not supported by the 2023 data. Instead, African nations demonstrate an ability to enter the final third and generate goal-scoring opportunities at a rate comparable to the global elite.

4.2 .Control vs. Pragmatism: Interpreting the LDA Results

While teams attack similarly, they win differently. The Linear Discriminant Analysis (LDA) revealed a fundamental divergence in the "DNA of Victory".

World Cup (The Control Model): Victory was strongly predicted by Pass Completion and Progressive Passes. This aligns with previous findings in elite European football (Collet, 2013), suggesting that at the highest level, the team that minimizes technical variance and controls the ball is statistically favored. The significantly higher pass accuracy (80.9%) and defensive activity (54.9 actions) in the WC suggest a meta-game defined by "active dominance" winning by imposing structure. indicating a tactical emphasis on technical precision, structured build-up play, and aggressive pressing strategies among the global elite (Branquinho et al., 2024). This "control-oriented" approach seeks to minimize technical variance and errors, maximizing possession and dictating the tempo of the game. Such strategies are consistently favored in elite international tournaments like the World Cup, where technical execution benefits from optimal playing conditions and highly skilled players (Lepschy et al., 2020; Renner et al., 2024; Yan et al., 2024) .Previous research, such as analyses of the 2010 FIFA World Cup, also underscored the importance of performance parameters like total shots, shots on target, and ball possession in distinguishing successful teams (Castellano et al., 2012; Clemente, 2012) The feedback from performance analysis has long been recognized as a crucial component for enhancing coaching processes and improving technical and tactical execution (Njororai, 2013) .

AFCON (The Pragmatism Model): the AFCON context revealed a winning mechanism strongly correlated with robust defensive indicators like clearances, aerial duels, and fouls. This suggests that a more physical, direct, and risk-averse defensive approach is more effective in securing victories in AFCON. This could be attributed to a range of contextual variables specific to the African continent, such as varying pitch qualities, high ambient temperatures, and travel demands, which can collectively influence match intensity, technical execution, and player fatigue. These environmental factors might favor tactics that prioritize defensive



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solidity and physical engagement over intricate passing patterns and high-intensity pressing. Several factors likely explain this: Environmental Constraints: The 2023 AFCON was played in Côte d'Ivoire, characterized by high humidity and temperature. (Nassis et al., 2015) demonstrated that thermal stress reduces high-intensity running and technical precision. In such conditions, a high-possession strategy becomes physically costly and risky. Technical Volatility: The significantly lower aggregate pass accuracy in AFCON (78.8%) implies a higher turnover rate. In a game state where technical errors are more frequent (due to pitch quality or fatigue), the "Winner" is the team that manages these errors best—often by clearing the ball (Safety) rather than attempting risky build-up play.

4.3 .The Role of Defensive Intensity

The World Cup featured significantly higher Defensive Activity (Pressing) than AFCON ($p=0.004$). This validates the "high-press" evolution of global football. In contrast, the lower defensive volume in AFCON suggests a prevalence of "mid-block" or "low-block" strategies. This is a rational adaptation to the climatic conditions; maintaining a high press for 90 minutes in sub-Saharan heat is physiologically unsustainable (Mohr et al., 2012). Consequently, AFCON teams prioritize spatial control (blocking passing lanes) over an active ball recovery.

4.4 .Practical Applications for Coaches

For practitioners, these findings suggest that tactical periodization must be context specific.

Preparing for the World Cup: Training should focus on high-intensity pressing resistance and technical consistency under pressure; ***Preparing for AFCON:*** Training should prioritize "crisis management"—defending set-pieces (Aerial Duels), organizing the low block, and mastering direct transitions (Clearances into counters). Attempting a possession model in AFCON may be statistically suboptimal given the strong correlation between pragmatism and victory.

This emphasizes the critical importance of understanding the specific competitive environment when developing and implementing tactical models (Fernandes et al., 2020; González-Ródenas et al., 2019; Kong et al., 2022). Coaches and technical staff preparing teams for continental competitions must consider these nuanced differences and tailor their strategies accordingly, rather than adopting a one-size-fits-all approach based solely on global trends.

This study provides compelling evidence that while offensive outputs in international football may be converging, the underlying tactical mechanisms for victory remain context dependent. The 2022 FIFA World Cup rewards "Control" through superior technical execution and aggressive defensive pressing, whereas the 2023 Africa Cup of Nations favors robust defensive actions and physical engagement.

4.5 .Limitations

This study did not control the specific quality of opposition (FIFA Ranking) within individual matches. Additionally, while the "90-minute filter" ensured consistency, it excludes the specific physiological dynamics of extra time, which is common in knockout stages.

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