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Technical–Tactical Determinants of Match Success in Elite U-17 Football: An In-depth Performance Analysis of Japan vs Morocco during the FIFA U-17 World Cup

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Abstract

Background: Technical–tactical analysis has become central to understanding performance mechanisms in elite football, yet limited evidence exists for how advanced tactical behaviors manifest at the youth-international level. This study conducts a multidimensional analysis of the FIFA U-17 World Cup match between Japan and Morocco to identify performance determinants associated with match success. **Methods:** High-resolution event-level and positional data (>400 variables) were extracted from the official FIFA post-match technical report. Indicators were grouped into five analytical dimensions: attacking actions, possession structure, defensive and pressing behaviors, movement and spatial variables, and physical outputs. Descriptive comparisons, passing-network modelling, spatial-structural evaluation, and integrated tactical interpretation were used to characterize team performance. **Results:** Japan demonstrated markedly superior attacking efficiency, producing more shots, more final-third receptions, and significantly higher line-break completion despite fewer attempts. Passing-network analysis revealed compact and stable circulation structures centered on recurrent defender–midfielder connections, contrasting with Morocco's fragmented, goalkeeper-dependent network. Japan's defensive model was characterized by shorter team length, tighter horizontal compactness, more effective direct pressures, and faster ball-recovery time (13.03 s vs 16.11 s). Goalkeeping outcomes further reflected team-level stability, with Japan achieving a 100% save rate compared with Morocco's 67%. Physical-performance data showed Japan generated greater high-intensity running and more evenly

distributed sprint actions, consistent with coordinated pressing and dynamic support play. **Conclusion:** Match success at the elite U-17 level was determined by the integration of structurally coherent tactical behaviors—particularly line-breaking precision, compact passing-network organization, synchronized pressing, and coordinated high-intensity movement. Japan's cohesive game model produced sustained positional, temporal, and spatial advantages across match phases. These findings underscore the importance of collective structures rather than isolated technical or physical outputs in youth-elite football performance.
Keywords: Youth Football, Technical–Tactical Analysis, Line-Breaking, Passing Networks, Pressing Efficiency, Physical Performance, FIFA U-17 World Cup

Introduction

The technical–tactical analysis of football performance has increasingly become a central topic in contemporary sports science(Brink & Lemmink, 2018; Sarmento et al., 2014). With the rapid development of optical tracking systems and event-based analytics, modern research has shifted toward understanding *how* teams generate advantages through line-breaking actions, collective pressing behaviors, positional structures, off-ball movement patterns, and spatial occupation(Andrienko et al., 2017; Rico-González et al., 2020). These analytical approaches provide a multidimensional understanding of match play, allowing researchers to move beyond simple descriptive statistics and instead examine the mechanisms underlying tactical superiority.

Elite youth competitions, particularly the FIFA U-17 World Cup, offer a unique platform for studying early manifestations of these tactical principles(Borges et al., 2017). Unlike Chinese youth leagues, this tournament brings together diverse football cultures and high-performing youth systems, resulting in rich contrasts in playing styles, developmental philosophies, and technical–tactical profiles(Ju et al., 2025). Such diversity makes the competition an ideal context for examining how foundational tactical behaviors are expressed at the highest youth level.

Previous studies have shown that performance indicators such as passing sequences, final-third entries, defensive pressure intensity, and compactness can meaningfully predict match outcomes in elite football(Russomanno et al., 2020). However, existing research has predominantly focused on adult professional leagues (e.g., the UEFA Champions League and top-tier domestic competitions). In contrast, empirical research on youth international football remains limited and often lacks high-resolution spatiotemporal or tactical datasets necessary for detailed tactical diagnostics(Yu et al., 2025). As a result, comparatively little is known about how advanced tactical behaviors emerge and function at the elite youth stage. Only a small number of studies integrate multiple advanced tactical indicators into a unified analytical framework. Critical components such as line breaks (through or around opponent shape), phases-of-play dynamics, pressing direction and intensity, passing-network connectivity, movement-to-receive patterns, team length, and line height are rarely analyzed together, despite their known relevance to performance outcomes(Colomer et al., 2020; Plakias et al., 2024). This fragmentation restricts a comprehensive understanding of how interdependent tactical elements interact to influence match success.

To address these gaps, the present study conducts a comprehensive technical–tactical performance analysis of the FIFA U-17 World Cup match between Japan and Morocco, using the official high-resolution post-match technical report provided by FIFA(*FIFA*, n.d.). These two teams represent distinct youth football philosophies: Japan is characterized by a possession-oriented approach built on circulation, structured build-up, and collective organization, whereas Morocco emphasizes direct progression, physicality, and transition-based attacks. Their contrasting identities create a valuable case for examining how different tactical models shape performance at the elite youth level.

Study Objectives

The objectives of this study were to:

- Examine the attacking and ball-progression characteristics of Japan and Morocco during the FIFA U-17 World Cup match.
- Analyze passing-network structures and possession organization to identify differences in team tactical behavior.
- Compare defensive compactness, pressing efficiency, and ball-recovery mechanisms between the two teams.
- Evaluate goalkeeping performance and its relationship with team defensive organization.
- Investigate physical-performance profiles and their contribution to technical–tactical effectiveness.
- Identify the key technical–tactical determinants associated with match success in elite U-17 football.

By integrating diverse tactical indicators—including line-breaking actions, possession structures, pressing behaviors, passing networks, spatial compactness, and off-ball movement—this study aims to identify the technical–tactical determinants of match success in elite U-17 football. This comprehensive case analysis contributes to filling a significant gap in the youth football analytics literature and provides methodological insights for future performance analysis in developmental football contexts.

Methods

Data Source

Technical–tactical performance data for this study were obtained from the official FIFA U-17 World Cup post-match technical report for the Japan vs Morocco fixture. The report provides high-resolution event-level and positional information generated through FIFA's standardized performance analysis system. The dataset includes detailed indicators across multiple domains of match performance, such as shooting actions and chance creation, line-breaking and ball-progression events, passing sequences and network structures, crosses and final-third receptions, defensive pressures and forced turnovers, team line height and team length metrics, goalkeeping actions, movement-to-receive patterns, and comprehensive physical outputs including total distance covered and high-intensity running distances. Altogether, the dataset contains more than 400 variables, offering a multidimensional source of information for analyzing the technical–tactical mechanisms underlying match performance.

Performance Variables

The performance indicators used in this study were organized into five major analytical dimensions consistent with contemporary football performance frameworks. First, attacking variables included attempts at goal, ball-progression actions, line-break events (attempted and completed, both through and around the opponent's structure), final-third receptions, crosses and cross completions, and overall passing accuracy. Second, possession-structure variables comprised total passes and pass-completion rates, passing-network characteristics (such as degree centrality and link frequency), switches of play, team length during possession, and the distribution of phases of play, including unopposed and opposed build-up, progression, final-third play, long-ball actions, attacking transitions, and counter-attacks. Third, defensive and pressing variables captured total defensive pressures, direct pressures, forced turnovers, ball recovery time following loss of possession, and block height categorized as high, mid, or low defensive blocks. Fourth, Goalkeeping variables included distribution types and accuracy, shot-stopping actions, intervention outcomes, aerial control, involvement frequency, and recovery-related contributions, enabling comparison of workload, efficiency, and structural defensive stability between teams. Finally, physical performance outputs included total distance covered, high-speed running distance (20–25 km/h), and sprint distance exceeding 25 km/h. Together, these five dimensions represent widely recognized determinants of football performance and enable a comprehensive and integrated evaluation of tactical behaviors across all phases of match play.

Analysis Procedures

The analytical procedure consisted of three complementary components designed to capture both quantitative performance differences and underlying tactical mechanisms:

(1) Descriptive and Comparative Analysis

All technical–tactical indicators were descriptively compared between Japan and Morocco. Differences in attacking frequency, possession structure, defensive intensity, and movement patterns were described to identify performance tendencies and tactical contrasts.

(2) Network and Spatial-Structural Analysis

Passing networks were constructed using directed weighted graphs to quantify team organization, centrality of key players, and flow of possession. Team length, line height, and phase-of-play spatial patterns were evaluated to understand structural compactness and positional behaviors.

(3) Tactical Interpretation Integrating Multidimensional Indicators

Indicators such as line-break efficiency, pressing intensity, recovery time, and movement-to-receive patterns were integrated to generate a tactical interpretation of each team's game model and match-control mechanisms. This interpretive analysis linked quantitative performance metrics with underlying tactical strategies, enabling a deeper understanding of how specific behaviors contributed to match outcomes.

This combined methodological approach has been widely employed in modern performance analysis and is consistent with current trends in football analytics research.

Results

Japan demonstrated superior attacking efficiency

Japan displayed a markedly higher level of attacking efficiency than Morocco, as evidenced by multiple dimensions of performance captured in the match technical report (Figure 1). Although Japan held only 42.6% of ball possession—lower than Morocco's 46%—they converted their possessions into far more dangerous and repeatable attacking actions. Japan generated 17 total attempts compared with Morocco's 5, including 6 shots on target versus Morocco's 2, highlighting their superior ability to transform buildup sequences into high-quality finishing opportunities. This attacking productivity was matched by territorial dominance: Japan completed 104 receptions in the final third, almost double Morocco's 62, demonstrating consistent access to advanced zones and sustained control over attacking spaces.

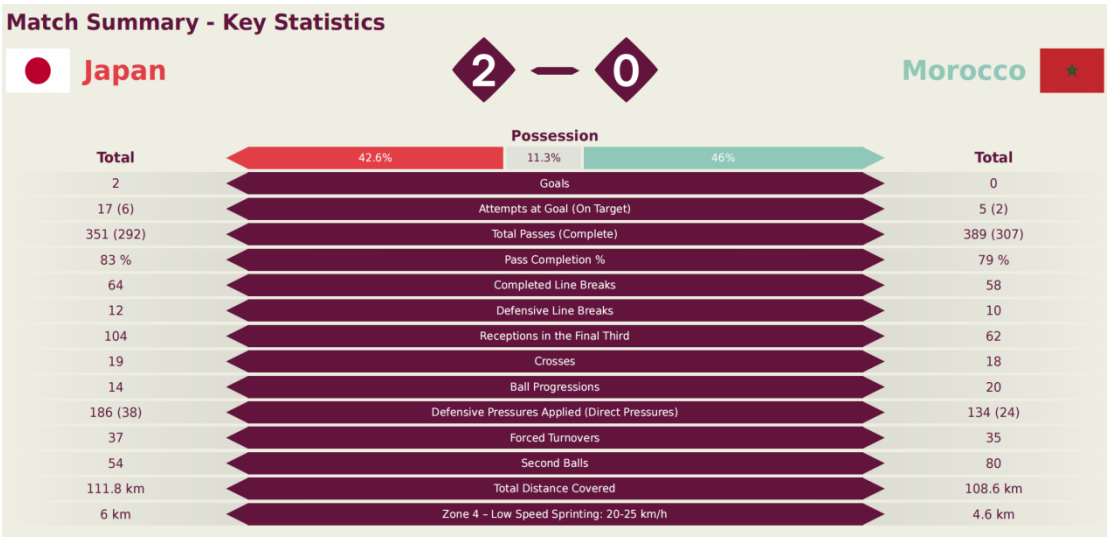

Figure 1. Key attacking and physical statistics of Japan and Morocco. Notes: Japan produced more attempts (17 vs 5), shots on target (6 vs 2), and final-third receptions (104 vs 62), reflecting superior attacking productivity. Data source: FIFA U-17 World Cup technical report.

A key mechanism underpinning Japan's attacking superiority was their highly efficient use of line-breaking actions. Despite attempting fewer line-break passes (92 vs 112), Japan completed 64 successful line breaks, outperforming Morocco's 58 not only in absolute terms but more critically in efficiency. Player-level data further reinforces this pattern: Japanese attackers and midfielders exhibited exceptional precision in progressing through the Moroccan defensive shape. Fujii completed 22 out of 27-line breaks (81%), while Hirashima achieved a perfect 6 out of 6 completion rates. Several other players, such as Asada (3/3, 100%) and Yoshida (2/3, 67%), also contributed to Japan's stable progression profile (Figure 2). These patterns illustrate a collective and well-rehearsed positional play model, enabling Japan to bypass Morocco's midfield lines with both frequency and reliability.

Line Breaks — **Japan**

					4 Units				3 Units			2 Units		Direction			Distribution Type		
#	Player	Line Breaks Attempted	Line Breaks Completed	Line Break Completion %	Attacking Line	Attacking Midfield Line	Midfield Line	Defensive Line	Attacking Line	Midfield Line	Defensive Line	Midfield Line	Defensive Line	Through	Around	Over	Pass	Cross	Ball Progression
1	Shuji MURAMATSU	2	0	0%	0	0	0	0	0	1	1	0	0	0	0	2	2	0	0
2	Asuto FUJITA	4	2	50%	0	0	0	0	0	1	0	3	0	2	1	1	4	0	0
4	Shota FUJII	27	22	81%	0	0	0	1	6	6	2	10	2	3	15	9	25	2	0
5	Anthony Udemba MOTOSUNA	12	8	67%	0	0	1	0	4	1	1	5	0	2	8	2	12	0	0
7	Kaiji CHONAN	9	4	44%	0	0	0	0	1	2	3	3	0	3	3	3	7	0	2
10	Minato YOSHIDA	3	2	67%	0	0	0	1	0	1	1	0	0	1	1	1	3	0	0
11	Hiroto ASADA	3	3	100%	0	0	0	0	0	1	0	1	1	2	1	0	3	0	0
13	Daigo HIRASHIMA	6	6	100%	0	0	1	0	0	2	0	2	1	4	2	0	6	0	0
14	Daizen KAWAMOTO	7	3	43%	0	0	0	0	1	3	0	2	1	3	1	3	7	0	0
19	Takeshi WADA	11	10	91%	0	0	0	1	0	2	0	6	2	3	5	3	11	0	0
20	Taiga SEGUCHI	4	2	50%	0	0	0	0	0	1	0	2	1	2	2	0	4	0	0
15	Makoto HIMENO	4	2	50%	0	0	0	0	0	2	0	1	1	0	1	3	4	0	0
18	Jelani Ren McGHEE	0	0	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 2. Player-level line-break actions for Japan. Notes: Japanese players demonstrated high line-break efficiency, especially Fujii (81%) and Hirashima (100%). Data source: FIFA U-17 World Cup technical report.

Morocco's progression relied heavily on direct and less controlled methods (Figure 3). The Moroccan goalkeeper attempted 17 line-break passes but completed only 3 (18%), indicating a strong dependence on long-ball distribution rather than coordinated buildup. Although Morocco attempted more line breaks overall, their lower completion rate (particularly their inability to break Japan's midfield line consistently) limited their capacity to establish possession in threatening regions. Their limited 18 final-third receptions from build-up actions, combined with more frequent reliance on long-ball play (8% of possessions), further constrained their ability to generate sustained attacking momentum.

Line Breaks — **Morocco**

					4 Units				3 Units			2 Units		Direction			Distribution Type		
#	Player	Line Breaks Attempted	Line Breaks Completed	Line Break Completion %	Attacking Line	Attacking Midfield Line	Midfield Line	Defensive Line	Attacking Line	Midfield Line	Defensive Line	Midfield Line	Defensive Line	Through	Around	Over	Pass	Cross	Ball Progression
1	Chouaib BELLAAROUCH	17	3	18%	0	0	0	0	6	9	0	2	0	0	0	17	17	0	0
4	Yousef BELLAHSEN	11	6	55%	0	0	0	1	5	2	0	2	1	1	4	6	11	0	0
6	Elyes SAIDI	6	5	83%	0	0	0	0	2	1	1	1	1	4	0	2	6	0	0
8	Abdellah OUAZANE	8	4	50%	0	0	0	0	1	3	3	1	0	2	0	6	6	2	0
9	Ziyad BAHA	1	0	0%	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1
13	Driss AIT CHIEKH	12	7	58%	0	0	0	0	5	5	1	1	0	2	2	8	12	0	0
15	Ilyas HIDAOUI	21	11	52%	0	0	0	0	6	11	3	1	0	6	3	12	21	0	0
17	Moncef ZEKRI	13	8	62%	0	0	1	0	3	4	0	3	2	1	6	6	10	2	1
18	Zakari EL KHALFIOUI	13	8	62%	0	1	1	0	1	4	3	1	2	4	3	6	13	0	0
20	Ismail EL AOUD	1	1	100%	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0
21	Abdelali EDDAOUDI	6	4	67%	0	0	1	0	2	0	1	1	1	1	2	3	4	1	1
3	Ilyas EL ARBAOUI	1	0	0%	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0
10	Wassim DARDAKE	0	0	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Ahmed MOUHOUB	0	0	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Oualid IBN SALAH	2	1	50%	0	0	0	1	0	1	0	0	0	0	1	1	2	0	0
19	Nahel HADDANI	0	0	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 3. Player-level line-break actions for Morocco. Notes: Morocco relied heavily on direct long-ball distribution, with lower completion rates, particularly from the goalkeeper. Data source: FIFA U-17 World Cup technical report.

The phases-of-play data reveal clear differences in ball progression efficiency (Figure 4). Japan spent 43% of their possessions in unopposed build-up compared to Morocco's 35%, suggesting better structural support in early phases. Japan also recorded a higher proportion of controlled attacking transitions (13% vs 16% for Morocco), but crucially, they converted these into more meaningful final-third occupations and finishing actions. The qualitative pattern is therefore consistent across indicators: Japan progressed with structure, tempo control, and precision, while Morocco's attacks often broke down early due to incomplete progression actions and an absence of stable central connectivity.

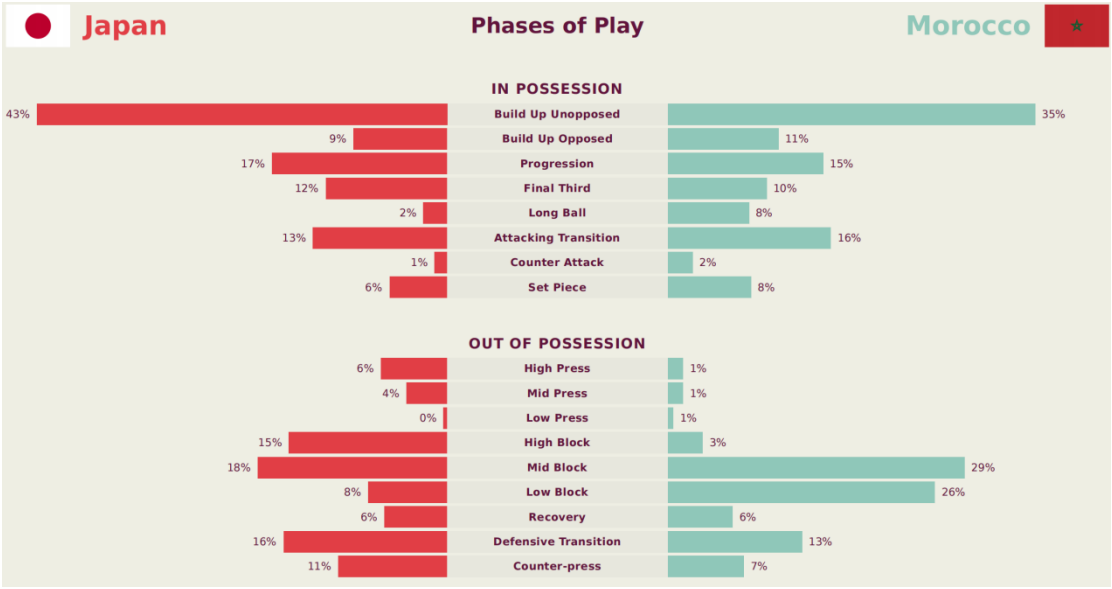

Figure 4. Phases of play distribution for both teams. Notes: Japan showed more structured build-up and controlled progression, while Morocco relied more on long-ball actions and transitions. Data source: FIFA U-17 World Cup technical report.

Taken together, the combined evidence from shooting output, final-third access, phases of play, and line-break efficiency demonstrates that Japan's attacking superiority was not merely the result of isolated actions but emerged from a coherent and well-executed positional play framework. Their synchronized movements, high-quality receiving structures, and efficient exploitation of progression opportunities allowed them to maintain attacking pressure throughout the match, providing a decisive performance advantage that directly contributed to match success.

Japan's Passing Network was More Stable and Compact

Japan exhibited a more stable, compact, and hierarchically structured passing network compared with Morocco, as illustrated in the passing-network matrices (Figure 5). The Japanese network was characterized by strong central connectivity between the first and second lines of build-up, forming a consistent distribution triangle involving Fujita (RB), Fujii (CB), and Motosuna (CM). This triangular structure enabled Japan to maintain circulation stability and controlled progression into midfield.

The top passing link in Japan's network was Fujita → Fujii, accounting for 6.5% of all completed passes, followed by Fujii → Seguchi (5.1%) and Fujita ↔ Motosuna (4.7%). These high-frequency, short-distance linkages indicate a compact positional structure, with

defenders and midfielders engaging in repeatable exchanges to manage tempo and create favorable angles for line-breaking actions. The density and balance of Japan's network suggest a coordinated positional-play approach, allowing the team to establish stable possession platforms even under moderate Moroccan pressure.

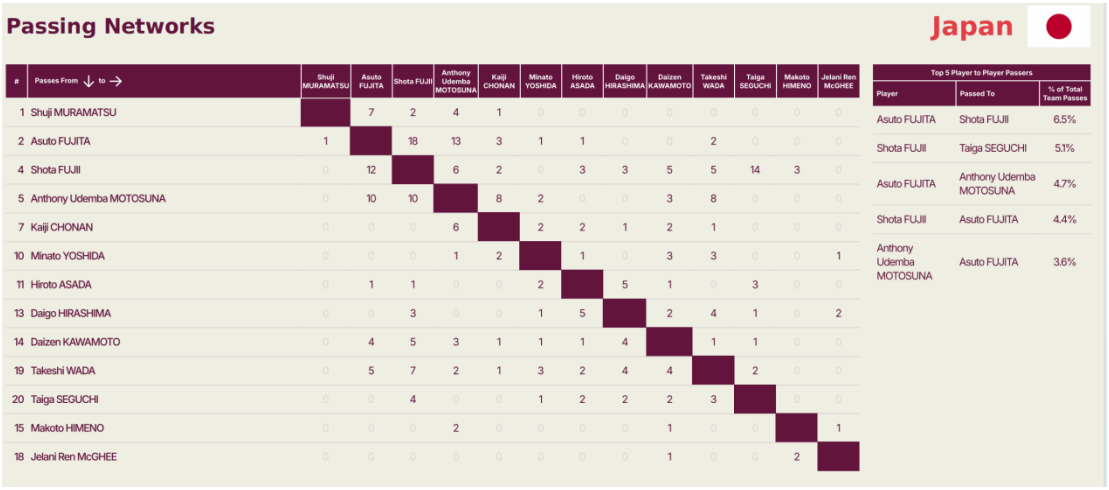

Figure 5. Passing network of Japan during the match. Notes: Japan showed a compact and stable passing structure, with strong links between Fujita, Fujii, and Motosuna forming the central distribution triangle. Key passing connections included Fujita → Fujii and Fujii → Seguchi, reflecting controlled circulation and coordinated build-up.

In contrast, Morocco's passing network showed signs of systemic instability (Figure 6). The Moroccan goalkeeper Bellaarouch emerged as one of the main passing hubs, producing the highest-volume connection (Bellaarouch → Ait Chiekh, 5.6% of total passes). Such a distribution pattern typically reflects difficulty in advancing through structured build-up phases, forcing the team to recycle possession through deeper, low-pressure zones. Moreover, Morocco's horizontal connectivity across the back line was noticeably weaker, and the midfield connections lacked the consistency observed in Japan's network.

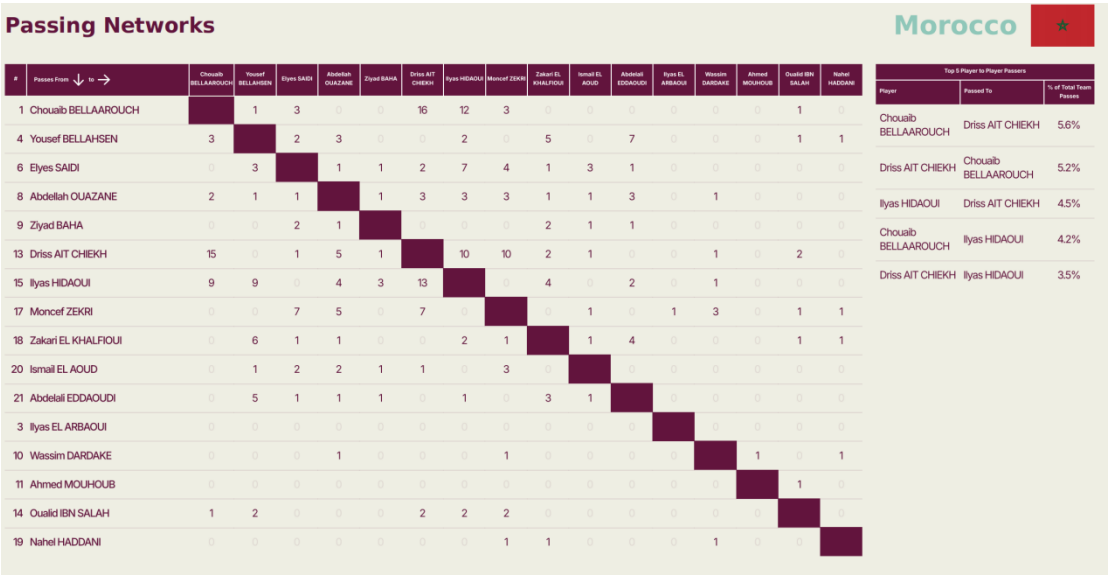

Figure 6. Passing network of Morocco during the match. Notes: Morocco's passing network was less stable, with the goalkeeper Bellaarouch functioning as a major passing hub. The

reliance on deep circulation and fewer consistent midfield connections indicates difficulty progressing through structured build-up.

Japan's compact and integrated passing network provided structural superiority and facilitated smoother transitions across phases of play. The reliance on repeatable defender-to-midfielder synergies enabled Japan to maintain control, generate more stable progression platforms, and support the high efficiency in line-breaking and final-third access reported in earlier sections. Conversely, Morocco's fragmented circulation and dependence on the goalkeeper for distribution limited their ability to construct sustained attacks or advance positionally through Japan's defensive lines.

Japan's Defensive Compactness and Ball-Recovery Superiority

Japan displayed a more coordinated and effective defensive structure than Morocco, as reflected in multiple performance indicators. Although both teams generated a comparable number of forced turnovers (Japan 37 vs Morocco 35), Japan recovered possession more frequently (48 vs 40), highlighting stronger collective reactions following defensive actions. The spatial distribution maps (Figure 7) show that Japan regained possession across more advanced and central zones, whereas Morocco's recoveries were clustered deeper, particularly around their penalty area, reflecting a more reactive defensive model.

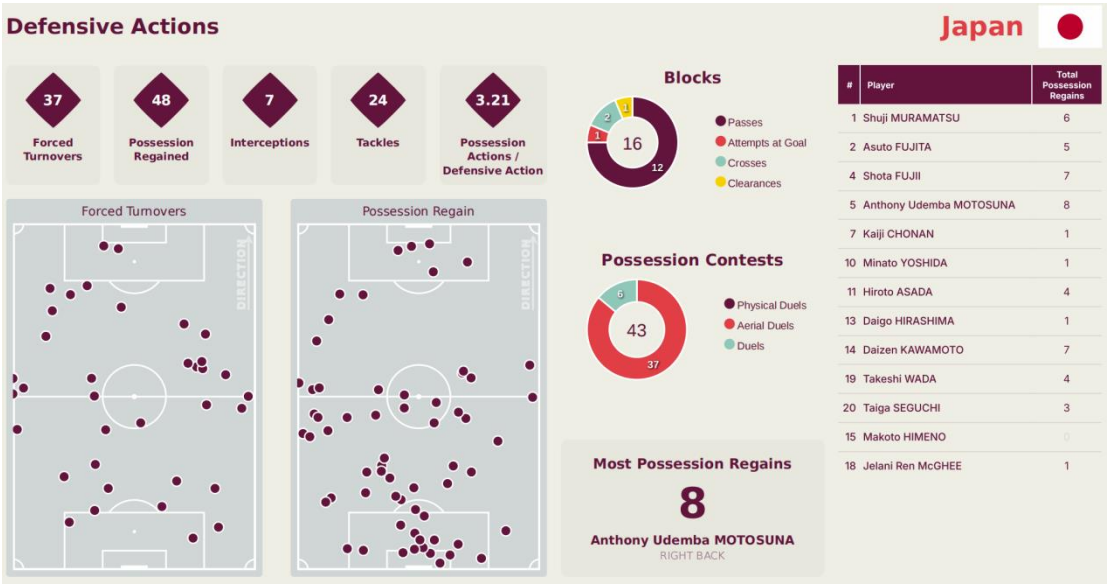

Figure 7. Defensive action distribution and possession regain of Japan. Notes: Japan demonstrated higher defensive intensity with more frequent possession regains and spatially advanced recoveries across central and wide zones.

Japan also performed more defensive duels (43 total, with 37 physical duels), showing greater engagement in ball contests compared with Morocco's 46 duels but with more balanced distribution across midfield and wide channels (Figure 7-8). Player-level data further indicate Japan's superior defensive contribution: Anthony Motosuna led the team with 8 possession regains, followed by Fujii (7), Wada (4), and Seguchi (3). In contrast, Morocco's leading player in recoveries was goalkeeper Bellaarouch (7), demonstrating that many defensive sequences ended deep in Morocco's defensive third rather than through proactive interventions by outfield players.

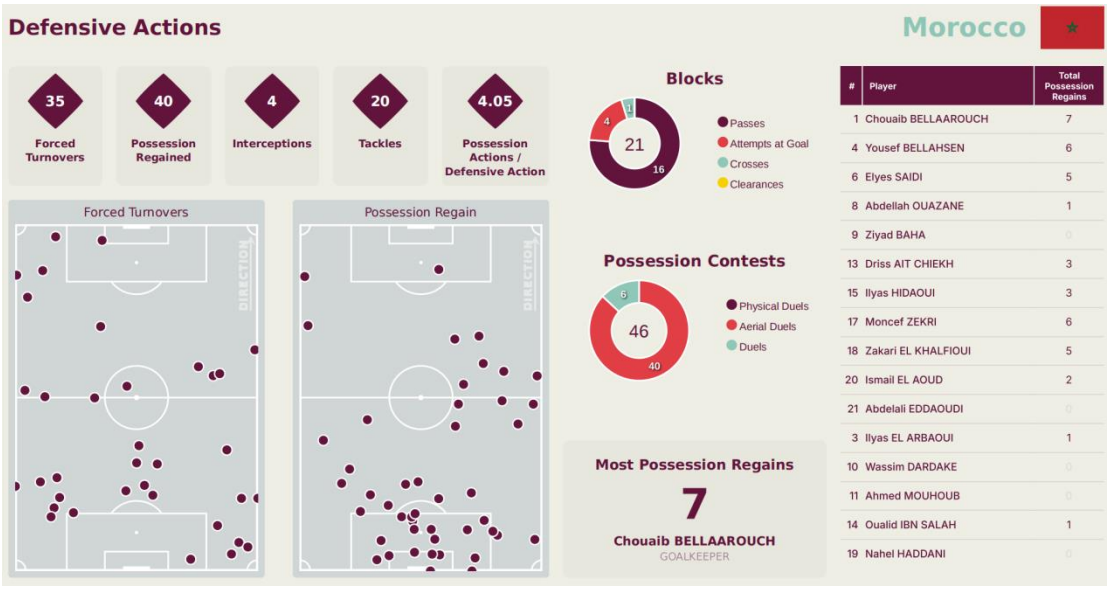

Figure 8. Defensive action distribution and possession regains of Morocco. Notes: Morocco's defensive actions were concentrated deeper in their defensive third, indicating a more reactive and low-positioned defensive structure.

The defensive block and team-length visualizations also demonstrate clear structural differences (Figure 9-10). Japan maintained a compact shape across high, mid, and low blocks, with team lengths ranging from 33–49 m and narrower widths in all phases. This compactness provided stability during pressing and allowed for faster collective reactions after losing possession. Conversely, Morocco showed larger defensive widths (up to 40 m) and greater vertical stretching (36–49 m), particularly in high and mid blocks, increasing the distances between lines and making their structure more vulnerable to Japan's line-breaking actions.

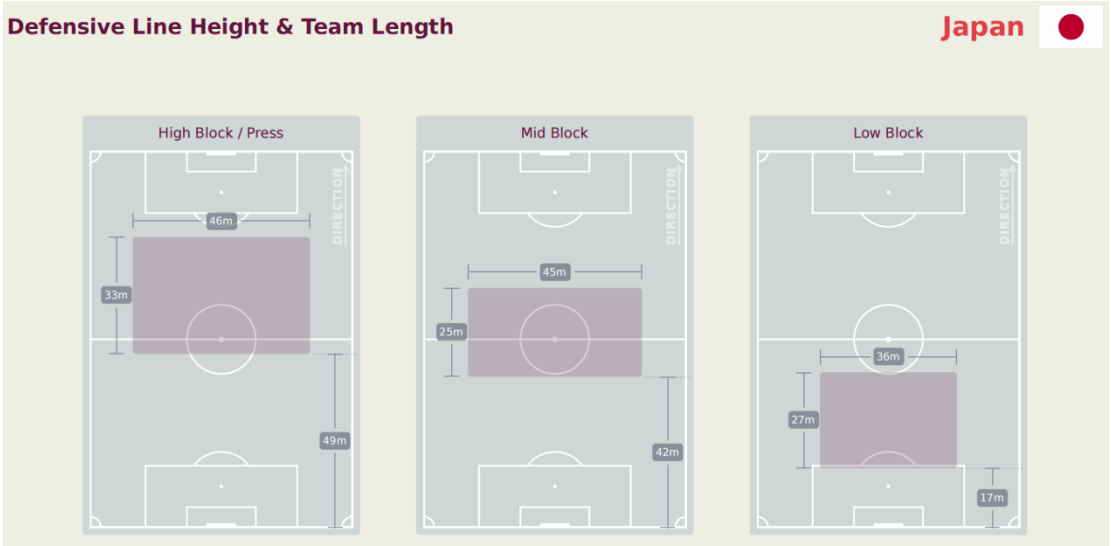

Figure 9. Defensive line height and team compactness of Japan across high, mid, and low blocks. Notes: Japan maintained shorter team lengths and more compact defensive spacing in all blocks, supporting coordinated pressing and faster collective recovery.

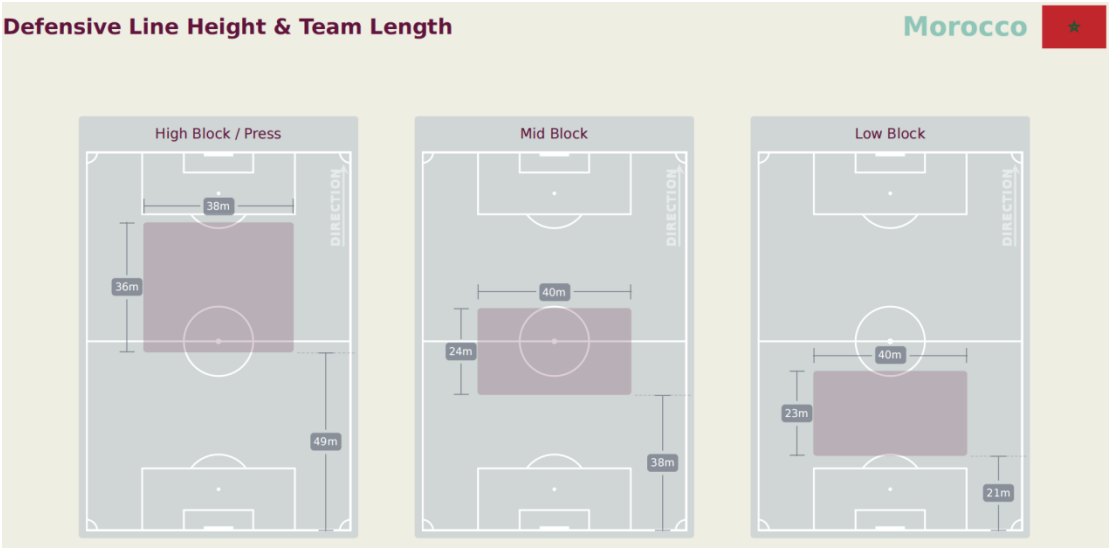

Figure 10. Defensive line height and team compactness of Morocco across high, mid, and low blocks. Notes: Morocco exhibited larger defensive widths and vertical stretching across blocks, reflecting less compact defensive organization.

Japan's pressing efficiency was also superior (Figure 11). Despite Morocco recording a higher number of total pressures (186 vs 134), Japan produced more direct pressures (38 vs 24) and significantly shorter ball recovery time (13.03 s vs 16.11 s). This indicates that Japan's pressing, though less frequent, was more targeted and effective. Japanese midfielder Takeshi Wada contributed the most direct pressures (8), whereas Morocco's top contributor, Bellahsen, achieved only five. Furthermore, Japan applied a balanced pressing direction profile (32 inside, 100 outside), while Morocco relied heavily on forcing play outside (92), suggesting a less coordinated pressing trigger system.

Figure 11. Pressing actions and ball-recovery characteristics of Japan and Morocco. Notes: Japan applied more effective direct pressures and achieved shorter ball-recovery times, whereas Morocco's pressing actions were less coordinated and less efficient.

Taken together, these findings illustrate that Japan defended with greater structural compactness, more coordinated pressing, and stronger mechanisms for regaining possession.

Their ability to maintain shorter team lengths, contest duels effectively, and recover the ball faster provided a defensive platform that not only limited Morocco's progression but also enabled Japan to initiate more controlled attacking transitions.

Goalkeeping Performance of Japan and Morocco

Japan and Morocco displayed markedly different goalkeeping profiles across involvement frequency, distribution patterns, intervention efficiency, and aerial control (Figure 12). Morocco's goalkeeper was involved more than twice as frequently as Japan's (72 vs 32 total involvements), with sustained activity throughout both halves. The higher frequency reflected Morocco's greater defensive workload and pressure absorption, whereas Japan's lower involvement indicated more stable defensive control and reduced exposure to direct threats.

Figure 12. Goalkeeping Involvement of Japan and Morocco. Notes: Temporal involvement profiles of both goalkeepers across the match. Morocco's goalkeeper showed a substantially higher activity load (72 involvements) compared with Japan's (32), indicating greater defensive pressure and reliance on goalkeeper actions for ball circulation and clearance.

Clear differences emerged in distribution style and accuracy (Figure 13). Japan's goalkeeper attempted fewer total distributions and maintained a more controlled pattern, with a higher proportion of completed short and medium passes. Conversely, Morocco's goalkeeper attempted 45 foot-based distributions but completed substantially fewer, reflecting a reliance on long and direct deliveries. Morocco also produced 17 goalkeeper-attempted line breaks—significantly higher than Japan's two—though with limited completion efficiency, indicating frequent use of goalkeeper-led long passing under pressure.

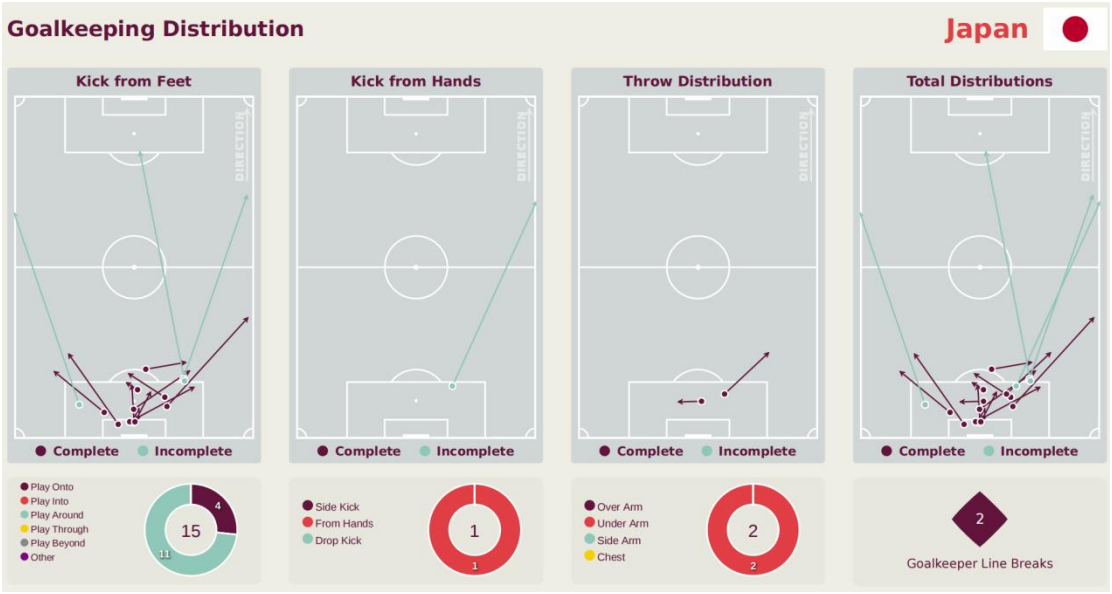

Figure 13. Goalkeeping Distribution Patterns of Japan. Notes: Spatial distribution map of Japan's goalkeeper actions, including kicks from feet, kicks from hands, and throws. Japan demonstrated controlled, short-to-medium distribution with higher completion rates and minimal use of long direct deliveries.

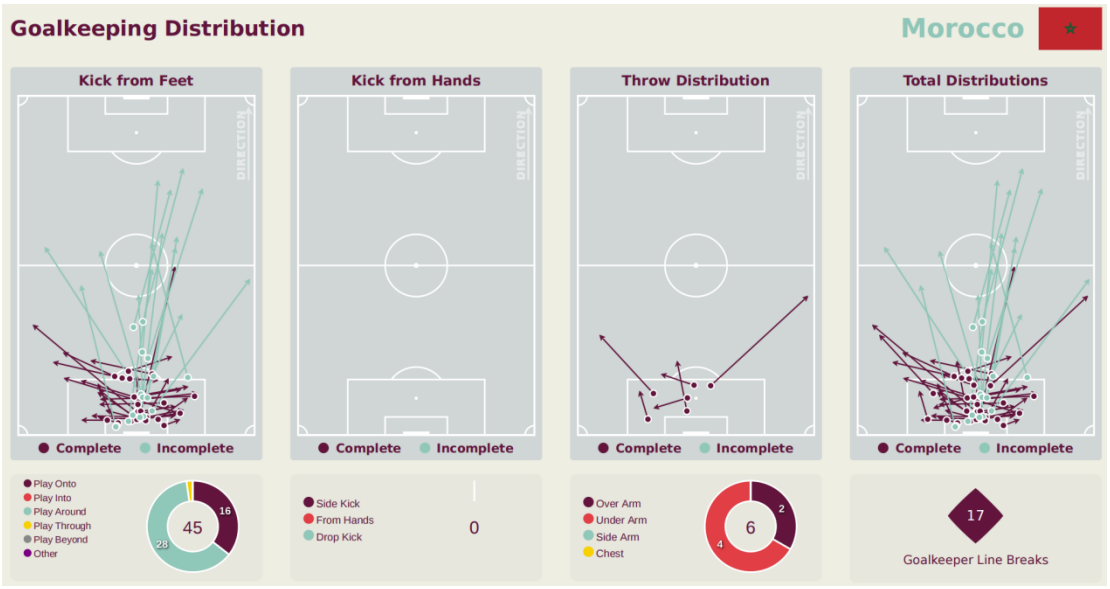

Figure 14. Goalkeeping Distribution Patterns of Morocco. Notes: Spatial distribution map of Morocco's goalkeeper, showing a high frequency of long and direct kicks with lower completion success. Morocco's goalkeeper attempted 17 line-break passes, highlighting reliance on long distribution under pressure.

Japan displayed a perfect defensive outcome (Figure 15), facing seven attempts on goal and achieving a 100% save rate with efficient intervention types, including both "save and retain" and "save and deflect" outcomes. The interventions were widely distributed across body regions, showing well-balanced technical execution.

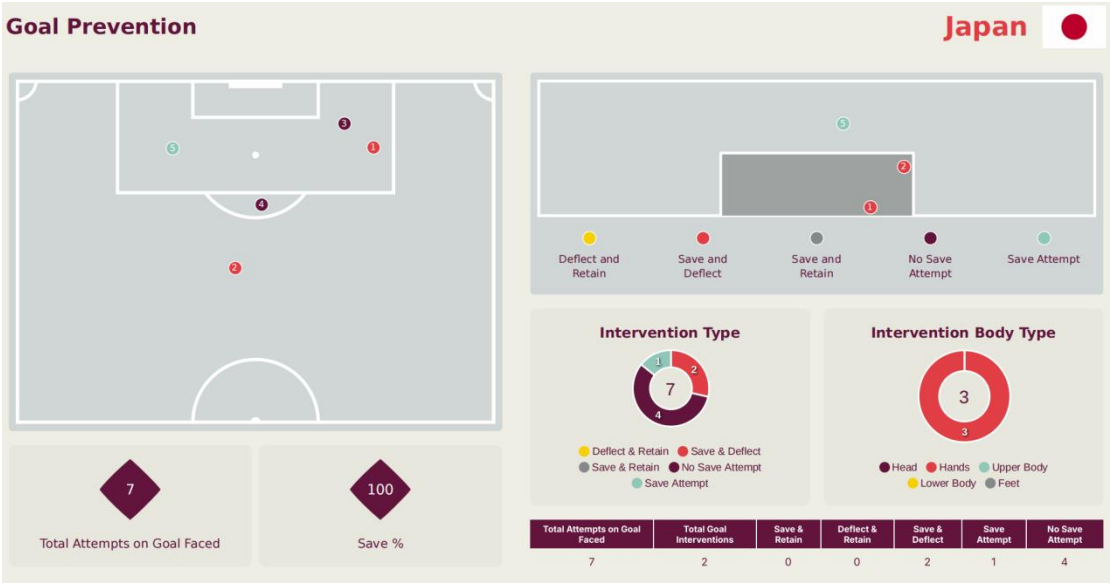

Figure 15. Goal Prevention and Shot-Stopping Actions of Japan. Notes: Japan's goalkeeper faced seven attempts on goal and achieved a 100% save rate. Intervention types included both "save and retain" and "save and deflect," reflecting efficient technical execution and effective box management.

Morocco, by contrast (Figure 16), faced 18 attempts and recorded a lower save percentage (67%). The majority of Morocco's interventions were "no save attempt" situations within the penalty area, signaling structural defensive lapses that exposed the goalkeeper to high-quality opportunities.

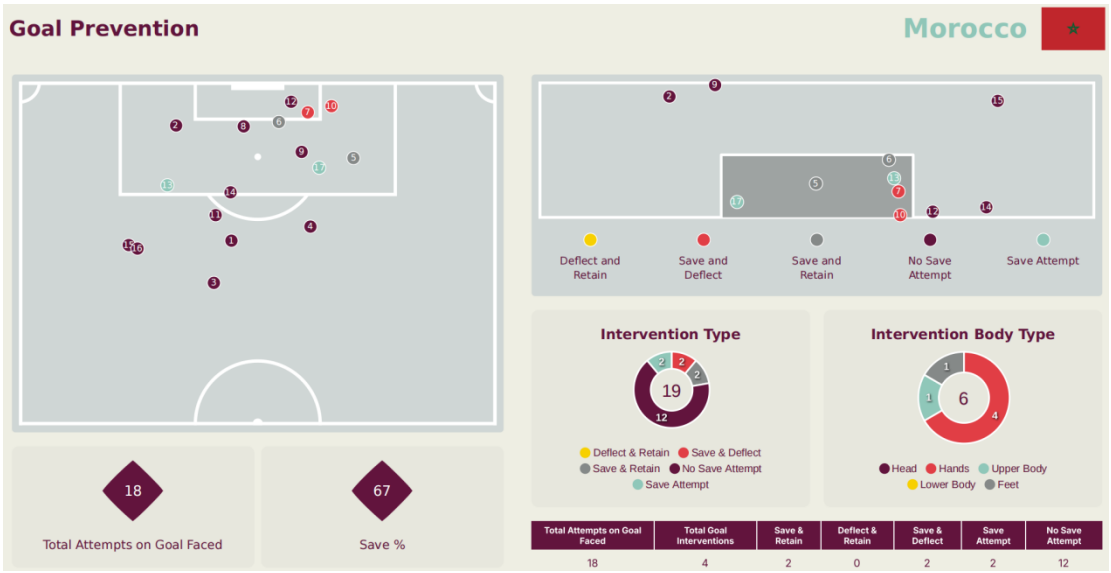

Figure 16. Goal Prevention and Shot-Stopping Actions of Morocco. Notes: Morocco faced 18 attempts on goal and recorded a 67% save rate. A high proportion of "no save attempt" events occurred within the penalty area, indicating structural defensive vulnerabilities that increased shot quality against the goalkeeper.

Japan demonstrated stronger aerial intervention stability, completing all aerial claims and punches across the four total interventions, ensuring secure box control. Morocco recorded

fewer aerial actions (two total interventions), with lower intervention diversity and more unchallenged deliveries within the penalty area, reflecting reduced defensive dominance against crosses.

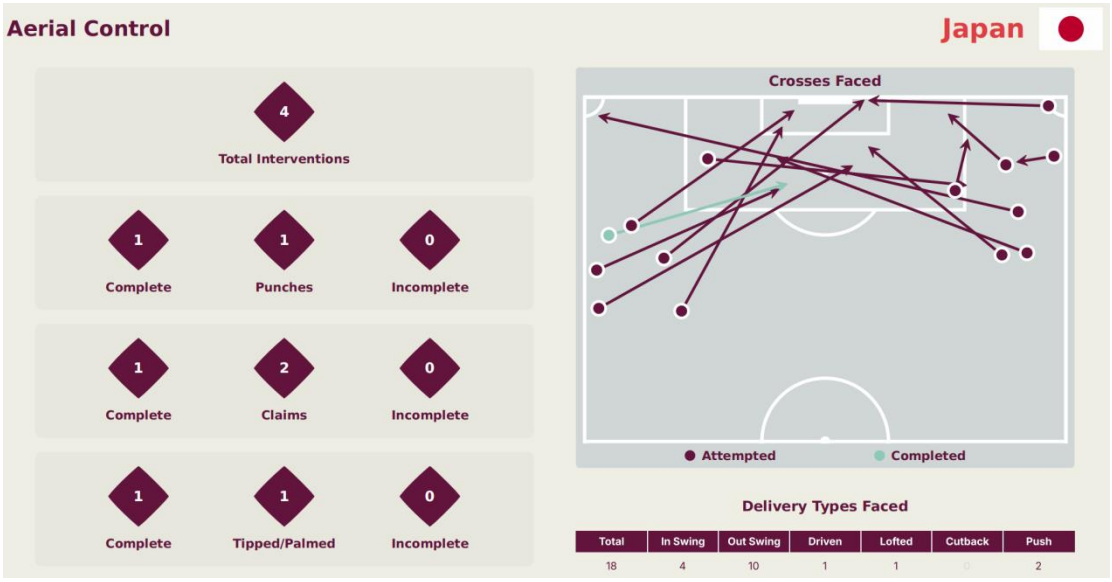

Figure 17. Aerial Control of Japan's Goalkeeper. Notes: Japan's goalkeeper completed all aerial interventions (claims and punches), demonstrating effective control of crosses and high balls into the penalty area.

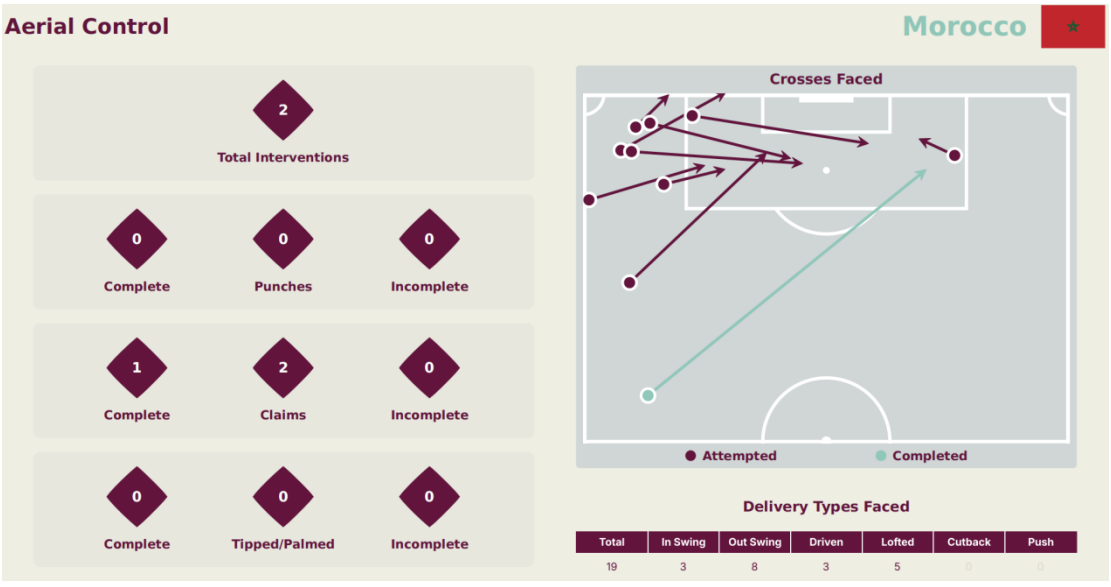

Figure 18. Aerial Control of Morocco's Goalkeeper. Notes: Morocco's goalkeeper recorded only two aerial interventions, with lower involvement and reduced influence in managing crosses, highlighting limited aerial dominance compared with Japan.

Overall, Japan's goalkeeping performance was characterized by lower workload, higher efficiency, and greater technical clarity, supported by compact defensive organization. Morocco's goalkeeper was required to intervene more frequently and under greater pressure, reflecting higher defensive instability and less effective distribution, ultimately contributing to differences in defensive outcomes between the two teams.

Physical Performance Profiles

The physical data (Figure 19) showed that both teams operated at a high aerobic–anaerobic load, but Japan displayed a slightly higher and more functionally oriented running profile. At team level, Japan covered more total distance than Morocco (111.8 vs 108.6 km) and accumulated greater high-intensity running in Zone 4 (20–25 km·h^{-1}; 6.0 vs 4.6 km), despite having less possession overall. This indicates that Japan's out-of-possession phases and off-ball movements were more physically demanding, consistent with their aggressive pressing and frequent forward runs to support line-breaking actions.

Within the Japanese team, several outfield players (e.g., Kawamoto, Hirashima, Yoshida) exceeded 10 km total distance with substantial volumes in Zones 3–4 (15–25 km·h^{-1}), while maintaining top speeds above 30 km·h^{-1}. The distribution of high-speed running and sprinting was relatively even across wide and central players, suggesting a coordinated physical response to tactical demands, particularly in pressing, overlapping runs, and dynamic movement to receive between lines.

Physical Data — **Japan**

CC

#	Player	Total Distance (m)	Zone 1: 0-7 km/h (m)	Zone 2: 7-15 km/h (m)	Zone 3: 15-20 km/h (m)	Zone 4: 20-25 km/h (m)	Zone 5: 25+ km/h (m)	High Speed Runs (Zone 3)	Sprints (Zone 4 & 5)	Top Speed (km/h)
1	Shuji MURAMATSU	5273.4	3978.4	1158.9	46.7	29.8	59.6	3.0	4.0	29.8
2	Asuto FUJITA	9497.3	3755.3	4304.4	913.6	387.5	136.5	90.0	28.0	31.9
4	Shota FUJII	10163.0	3773.8	4324.4	1198.8	539.4	326.7	105.0	40.0	32.2
5	Anthony Udemba MOTOSUNA	9713.8	4209.2	3803.5	1041.9	456.5	202.7	97.0	28.0	32.5
7	Kaiji CHONAN	10401.7	3811.4	4409.8	1338.0	541.7	300.8	122.0	52.0	33.5
10	Minato YOSHIDA	10691.4	4571.0	3789.4	1494.8	647.0	189.2	132.0	47.0	32.0
11	Hiroto ASADA	7344.9	2770.0	3387.6	807.4	313.6	66.3	70.0	29.0	27.9
13	Daigo HIRASHIMA	11339.3	3739.3	4871.6	1708.7	769.2	250.5	147.0	62.0	29.6
14	Daizen KAWAMOTO	11992.1	4065.6	5151.8	2080.1	609.2	85.4	174.0	38.0	29.9
19	Takeshi WADA	10817.0	4010.3	4319.5	1667.5	687.8	132.0	147.0	40.0	29.3
20	Taiga SEGUCHI	7984.0	2451.2	3804.5	1038.2	548.0	142.0	89.0	38.0	31.0
15	Makoto HIMENO	3031.5	1001.6	1253.4	547.3	209.8	19.3	55.0	17.0	28.1
18	Jelani Ren McGHEE	3543.5	1167.6	1479.4	505.1	211.9	179.5	45.0	15.0	31.6

Figure 19. Japan Physical Performance. Notes: Japan displayed balanced high-intensity running with multiple players contributing to Zones 3–5, supporting coordinated pressing and dynamic off-ball movements.

Morocco's players also covered high total distances (Figure 20), with multiple midfielders surpassing 10 km; however, a larger proportion of their load was accumulated at lower speed zones (0–15 km·h^{-1}). High-speed running and sprint distance were more concentrated in a few individuals and less evenly distributed across the team. Combined with the greater involvement of the goalkeeper and reliance on long, direct distributions, this suggests that a considerable part of Morocco's physical output was expended on recovery runs and chasing long balls rather than on synchronized high-intensity actions in a compact structure.

Physical Data — **Morocco**

CC

#	Player	Total Distance (m)	Zone 1: 0-7 km/h (m)	Zone 2: 7-15 km/h (m)	Zone 3: 15-20 km/h (m)	Zone 4: 20-25 km/h (m)	Zone 5: 25+ km/h (m)	High Speed Runs (Zone 3)	Sprints (Zone 4 & 5)	Top Speed (km/h)
1	Chouaib BELLAAROUCH	5177.7	4107.0	1002.0	65.4	3.3	0	8.0	0	21.7
4	Yousef BELLAHSEN	10144.2	3742.5	4073.9	1393.5	657.6	276.7	119.0	53.0	31.1
6	Elyes SAIDI	7683.5	2426.1	3892.4	1121.3	229.8	14.0	102.0	20.0	25.3
8	Abdellah OUAZANE	8492.8	3770.8	3739.3	766.3	182.2	34.1	65.0	15.0	27.1
9	Ziyad BAHA	7237.7	3121.2	3088.9	624.1	242.0	161.5	57.0	19.0	32.3
13	Driss AIT CHIEKH	10381.8	4024.0	4604.8	1337.4	310.6	104.9	124.0	28.0	31.2
15	Ilyas HIDAOUI	9811.2	3783.0	4864.1	811.1	291.5	61.6	81.0	22.0	29.8
17	Moncef ZEKRI	9835.9	3928.1	4401.6	1059.4	353.1	93.8	92.0	27.0	28.7
18	Zakari EL KHALFIOUI	10789.6	3673.9	5034.1	1515.6	486.6	79.4	145.0	37.0	28.5
20	Ismail EL AOUD	7361.0	2757.3	3095.9	831.2	518.1	158.5	73.0	36.0	31.5
21	Abdelali EDDAOUDI	9227.0	3200.7	4008.1	1201.0	579.0	238.2	103.0	49.0	31.4
3	Ilyas EL ARBAOUI	1637.5	464.6	633.2	265.5	220.6	53.5	24.0	15.0	28.8
10	Wassim DARDAKE	3044.6	1152.8	1299.6	345.0	130.6	116.6	31.0	10.0	32.8
11	Ahmed MOUHOUB	1724.6	455.5	851.1	272.6	103.2	42.2	22.0	10.0	29.2
14	Oualid IBN SALAH	3504.0	899.7	1702.7	711.5	166.6	23.5	48.0	12.0	31.6
19	Nahel HADDANI	2525.7	837.9	1246.3	289.8	133.5	18.2	30.0	11.0	28.5

Figure 20. Morocco Physical Performance. Notes: Morocco accumulated similar total distances but showed lower high-intensity output, with sprint efforts concentrated in fewer players, indicating less collective high-speed involvement.

The physical profiles support the technical–tactical findings: Japan's slightly higher but more uniformly distributed high-intensity workload appears to underpin their compact pressing, repeated line breaks, and dynamic support play, whereas Morocco's physical efforts were less efficiently integrated into a cohesive tactical model.

Discussion

This study provides a comprehensive multi-dimensional analysis of the technical–tactical and physical mechanisms that shaped match outcomes in elite U-17 international football. By integrating line-breaking actions, possession structures, passing networks, defensive compactness, pressing efficiency, goalkeeping performance, and physical outputs, the findings reveal a coherent pattern: Japan's superiority was driven not by isolated technical actions, but by an integrated tactical model that consistently generated positional, temporal, and spatial advantages. Several key themes emerge.

Line-Breaking Efficiency as a Key Driver of Attacking Superiority

Line-breaking actions are widely recognized as one of the strongest predictors of chance creation, territorial gain, and expected goal probability in elite football, as demonstrated in recent tactical analytics research(Karakuş & Arkadaş, 2025). In the present match analysis, Japan exhibited a distinctly superior line-breaking profile, achieving higher completion efficiency despite attempting fewer total line-break passes than Morocco. This asymmetry reflects not only technical precision but also a well-coordinated positional-play structure that consistently created stable progression lanes(Knudsen & Andersen, 2018; Silva & Menezes, 2018). Key contributors such as Fujii (22/27; 81%), Hirashima (6/6; 100%), and several supporting midfielders executed their line-breaking actions with exceptional reliability, enabling Japan to repeatedly access interior corridors and advance play through central channels—areas typically associated with high-value attacking opportunities.

Japan's efficiency is further explained by their synchronized spacing, balanced occupation of half-spaces, and frequent off-ball support movements, which collectively generated multiple "ready-to-receive" options ahead of the ball(Gonçalves et al., 2017a; Travassos et al., 2023a). This structural organization reduced the cognitive and physical load on the ball carrier, increased the availability of forward-facing receivers, and allowed Japan to maintain a high tempo in progression phases(Gautier et al., 2024). As a result, line-breaking actions translated directly into territorial advancement and contributed to Japan's superior volume of final-third receptions and shot creation.

Morocco relied heavily on goalkeeper-initiated long-ball distribution as their primary mechanism for bypassing Japan's compact midfield. While this approach yielded a higher number of attempted lines breaks overall, the completion rate was critically low (18%). The absence of coordinated support structures meant that even completed long balls rarely resulted in sustained possession or positional superiority(Cheng et al., 2025; James et al., 2012; Mattos dos Reis et al., 2017). The frequent loss of second balls further reduced Morocco's ability to consolidate attacks, leading to unstable progression sequences and restricted access to advanced zones. These findings reinforce that precision-driven, structurally supported line-breaking—rather than high-volume, low-control direct play—is fundamental to effective and repeatable attacking behavior in elite U-17 football(Armatas et al., 2025).

Passing-network Stability Enhanced Circulation and Tempo Control

Japan's passing network demonstrated a high degree of structural coherence, characterized by compact spacing, balanced centrality among key nodes, and strong recurrence of links between first- and second-line players. The persistent distribution triangle formed by Fujita–Fujii–Motosuna served as the tactical core of Japan's circulation, providing repeatable passing lanes, stable support angles, and immediate access to both interior and wide progression channels. Such network properties are strongly associated with predictable ball circulation, efficient tempo management, and increased capacity to penetrate through compact defensive structures(Castellano & Echeazarra, 2019; Chacoma, 2025; Pina et al., 2017). The connectivity patterns observed in Japan's network align with prior findings indicating that dense central-midfield linkages facilitate controlled advancement into high-value zones and reduce turnover risk during build-up(Deb et al., 2024).

Morocco's passing network was notably fragmented, with the goalkeeper functioning as an unexpected primary hub. This configuration reflects structural instability and a lack of coordinated midfield involvement, forcing frequent recycling of possession in deep zones. The absence of consistent horizontal and vertical connections limited Morocco's ability to manipulate Japan's defensive shape or create positional overloads. These disruptions in network coherence correspond with reduced progression efficiency and limited final-third access, reinforcing the notion that network integration—not merely pass volume—determines the quality of possession in elite youth football(Mendes et al., 2018).

Off-ball Movement Enhanced Japan's Positional Superiority

Japan's superiority in positional play was further reinforced by their markedly higher frequency and spatial diversity of off-ball "offers to receive," particularly within wide corridors and central midfield zones. These repeated support movements generated

continuous occupation of advantageous spaces, providing multiple passing lanes and improving the angles for progression, thereby increasing the functional value of Japan's line-breaking actions(Travassos et al., 2023b). The constant availability of receivers enabled smoother circulation, quicker exploitation of forward gaps, and more stable access to the half-spaces—key zones associated with enhanced attacking threat in elite football(Passos et al., 2020).

From a theoretical perspective, these behaviors align with ecological-dynamics principles, which posit that coordinated off-ball movement broadens the team's affordance landscape and enhances players' perceptual–action coupling(Steiner et al., 2017). By synchronizing movement timing and spatial positioning, Japan created fluid support structures that facilitated superior ball progression under pressure. In contrast, Morocco exhibited lower movement density and uneven distribution across channels, resulting in fewer receiving options, reduced spatial variability, and predictable passing patterns. This limited their ability to generate overloads or positional superiority, ultimately constraining their capacity to construct meaningful attacking sequences.

Compact Defensive Organization Enhanced Ball Recovery

Although Morocco recorded a higher total number of pressures, their defensive effectiveness was substantially lower than Japan's. Japan applied fewer pressures overall but generated more direct pressures, recovered possession more frequently, and achieved a significantly faster ball-recovery time (13.03 s vs 16.11 s). This distinction reinforces the difference between pressing quantity and pressing quality, with Japan demonstrating a more synchronized, structurally supported, and tactically coherent pressing mechanism(Modric et al., 2023).

Central to Japan's efficiency was their superior defensive compactness. Across high, mid, and low defensive blocks, Japan consistently maintained shorter team lengths and reduced horizontal dispersion, ensuring tight spacing between defensive, midfield, and attacking lines(Low et al., 2022). This structural integrity produced three key tactical advantages. First, it minimized exploitable space between lines, restricting Morocco's ability to receive and turn in interior pockets and often forcing them into long-ball progression with low line-break efficiency(Gonçalves et al., 2017b). Second, the proximity between Japan's lines enabled rapid collective reactions after possession loss, allowing pressing triggers—such as a backward touch or poor body orientation—to activate multiple players simultaneously, reducing recovery time and increasing central regains(Santos & Lago-Penas, 2019a). Third, Japan's compactness supported coordinated group pressing rather than isolated individual pressure, preserving coverage and balance while maintaining structural stability behind the ball(Santos & Lago-Penas, 2019b).

By contrast, Morocco exhibited greater vertical stretching (up to 49 m) and wider horizontal gaps, particularly in high and mid blocks. These structural deficiencies delayed supporting players during pressing sequences, created open central lanes, and increased the likelihood of Japan exploiting these spaces through efficient line-breaking passes. Consequently, Morocco's pressing actions frequently collapsed due to insufficient collective support, forcing their defensive line to retreat and reducing their capacity to sustain pressure or recover the ball quickly.

These findings align with emerging evidence in elite football analytics showing that pressing efficiency—defined by compactness, coordination, and recovery time—is a stronger predictor of defensive success than pressing volume(Forcher et al., 2024). At the U-17 level, where tactical cohesion is still developing, Japan demonstrated a mature and disciplined defensive model that enabled rapid ball recovery, disrupted Morocco's buildup, and contributed significantly to their territorial and tactical dominance.

Goalkeeping outcomes Reflected Team-Level Structural Stability

Goalkeeping performance in this match closely reflected the broader defensive structures of each team. Japan's goalkeeper faced relatively few shots yet displayed complete efficiency, achieving a 100% save rate and demonstrating stable control of aerial spaces. The limited number and lower quality of attempts conceded were direct outcomes of Japan's compact defensive organization, which restricted Morocco's ability to create dangerous shooting opportunities. Japan's defensive line protected central spaces effectively, enabling the goalkeeper to intervene in a controlled, predictable manner.

Morocco's goalkeeper experienced substantially greater workload, with 72 total involvements and a save efficiency of only 67%. The high proportion of "no save attempt" events, particularly within the penalty area, highlights defensive breakdowns that exposed the goalkeeper to unprotected situations rather than representing technical shortcomings. Morocco's structural stretching and ineffective pressing coordination resulted in more high-quality chances against, forcing the goalkeeper into repeated emergency actions. These findings underscore that goalkeeping outcomes at the elite youth level are strongly influenced by team-level organization and collective defensive stability, rather than by isolated goalkeeping performance alone(Corrêa et al., 2014).

Physical Output Patterns were Consistent with Tactical Behaviors

The physical performance profiles of both teams were closely aligned with their underlying tactical behaviors. Japan produced greater volumes of high-intensity running and sustained sprint actions despite having less overall possession, reflecting a proactive game model built on coordinated pressing, repeated forward runs to support line-breaking actions, and dynamic off-ball movements to create positional superiority(Brîndescu et al., 2021). High-speed work was distributed widely across Japan's outfield players, indicating that these efforts were embedded within collective tactical mechanisms rather than dependent on individual physical output(Di Salvo et al., 2009).

Morocco's physical load was more heavily concentrated in lower-speed zones, with high-speed running clustered among only a small subset of players. This pattern suggests that much of Morocco's physical effort stemmed from reactive actions—such as recovery runs following turnovers or attempts to chase long-ball transitions—rather than coordinated high-intensity movements within a compact tactical structure.

These findings reinforce emerging evidence that high-intensity efforts contribute most to performance when integrated into synchronized tactical behaviors, particularly pressing and structured progression, rather than as isolated sprint outputs lacking collective support(Filter et al., 2023).

Conclusion

This study provides a comprehensive examination of the technical–tactical and physical determinants of match performance in elite U-17 football, using detailed multidimensional data from the FIFA U-17 World Cup match between Japan and Morocco. The findings demonstrate that Japan's superiority emerged not from isolated technical actions but from an integrated and coherent tactical model that systematically generated positional, temporal, and spatial advantages across phases of play.

A key determinant of Japan's success was its markedly higher line-breaking efficiency, which enabled repeated progression through Morocco's defensive structure and facilitated sustained access to advanced spaces. This was supported by a compact and highly stable passing network centered around predictable defender–midfielder connections, allowing Japan to maintain circulation, manipulate pressure, and control the tempo of play. Off-ball movement further enhanced these advantages by providing continuous receiving options and expanding functional passing lanes.

Defensively, Japan demonstrated superior compactness, coordinated pressing, and accelerated ball-recovery mechanisms. Their shorter team length, reduced horizontal stretching, and synchronized defensive reactions contributed to more effective direct pressing and significantly faster ball recovery compared with Morocco. This structural stability extended to goalkeeping performance: Japan's goalkeeper operated under lower pressure yet displayed complete efficiency, while Morocco's heavy reliance on goalkeeper interventions reflected broader defensive instability.

Physical output patterns aligned with these tactical behaviors. Japan's higher and more evenly distributed high-intensity running supported repeated forward movements, effective pressing, and dynamic positional rotations, whereas Morocco's physical expenditure was concentrated in reactive, low-efficiency movements.

These findings illustrate that match success at the elite U-17 level is driven by the integration of coordinated tactical structures, efficient progression mechanisms, and synchronized physical execution rather than by isolated technical or physical indicators. The analytical framework applied in this study offers a replicable model for future research seeking to understand developmental-level tactical performance and provides actionable insights for youth-elite coaching, emphasizing the importance of collective organization, structured build-up, line-breaking precision, and defensive compactness.

Theoretical and Contextual Contributions

This study contributes to the growing body of football performance-analysis literature in several important ways. First, it extends existing research on youth football by providing a comprehensive multidimensional framework that integrates attacking efficiency, line-breaking actions, passing-network structures, defensive compactness, pressing effectiveness, goalkeeping performance, and physical outputs within a single analytical model. Previous studies have often examined these variables independently, whereas the present study demonstrates how they interact collectively to influence match success in elite youth football.

Second, the study contributes to the theoretical understanding of collective tactical behaviour by highlighting the importance of structural coherence across different phases of play. The findings suggest that successful performance is not determined by isolated technical indicators but by the coordinated interaction between positional organization, movement patterns, and tactical decision-making.

From a contextual perspective, this study enriches the limited literature on international U-17 football by providing evidence from the FIFA U-17 World Cup, a competition that has received relatively little scholarly attention compared with senior professional football. The findings offer practical insights for coaches, performance analysts, and youth-development practitioners seeking to design training programmes that emphasize line-breaking efficiency, compact defensive structures, coordinated pressing, and collective tactical organization. Therefore, the study provides both theoretical advancement and applied value for the development of youth elite football.

Limitations

This study has several limitations. First, it is based on a single elite U-17 international match, which constrains the generalizability of the findings and prevents robust inference across different opponents, tactical styles, or tournament contexts. Second, goalkeeper-specific tracking data (e.g., footwork patterns, micro-adjustment velocities) and opponent-adjusted possession value metrics (EPV/xPV) were not accessible, limiting deeper quantification of defensive structural effects on goalkeeping performance. Finally, the study's descriptive-comparative design precludes causal inference regarding how specific tactical behaviors directly generate performance advantages. Future research should integrate multi-match datasets, full positional tracking, and explainable machine-learning models to enhance tactical interpretation and predictive accuracy.

Practical Implications

The findings provide several actionable insights for youth-elite training and performance analysis. Coaches should prioritize the development of structurally coherent tactical behaviors—particularly high-precision line-breaking actions, compact passing-network organization, and synchronized pressing mechanisms—to enhance both progression efficiency and defensive stability. Training tasks should emphasize coordinated off-ball movement and multi-player support structures to create stable receiving options and improve penetration through compact blocks. Defensive training should focus on maintaining shorter team lengths, reducing horizontal dispersion, and activating collective pressing triggers to accelerate ball recovery. From a goalkeeper-development perspective, integrating distribution accuracy, decision-making under pressure, and spatial control of the penalty area within team-tactical contexts may improve match stability. Performance analysts and data scientists may apply similar multidimensional frameworks to youth-level match evaluation, enabling more holistic identification of tactical patterns and improving feedback quality for coaching interventions.

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