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Statistical Analysis of Persib Bandung's Match Results in Liga 1 2023–2025

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Abstract

Match statistics are one of the indicators that can be used to objectively evaluate a soccer team's performance. Persib Bandung won the Indonesian Liga 1 championship in the 2023/2024 and 2024/2025 seasons consecutively, making it interesting to analyze the match statistics related to their results. This study aims to determine the relationship between match statistics and Persib Bandung's match results, as well as to identify the variables that most significantly influence match outcomes. The study employs a quantitative approach using a descriptive-correlational method. The data consist of secondary match statistics for Persib Bandung in the 2023/2024 and 2024/2025 Indonesian Liga 1 seasons, obtained from the New Indonesian League (LIB) and Soccerway. The sample comprised 72 matches selected using total sampling. Data analysis utilized the Mann-Whitney test and binary logistic regression. The results indicate that ball possession (p=0.360) and passing accuracy (p=0.464) do not have a significant relationship with match outcomes. Conversely, shots on goal exhibit a significant relationship (p=0.000). The logistic regression results indicate that shots on goal are the variable with the greatest influence on match outcomes (p=0.002; Exp(B)=1.702). Thus, shots on goal are the dominant factor associated with Persib Bandung's match results in the 2023–2025 Indonesian Liga 1 season.

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INTRODUCTION

Soccer is a ball game played by two teams, each consisting of eleven players, with the goal of scoring as many goals as possible against the opposing team (Fajrin *et al.*, 2021) . In Indonesia, soccer is one of the most popular sports. Its popularity is marked by high public enthusiasm, the large number of soccer schools (SSB), and competitions at various levels and for different age groups. Soccer plays an important role in people's lives; one of its roles is to unite the community through the sport itself (Fauzan, 2021) . In soccer, a team's success is not only determined by the individual technical skills of the players but is also influenced by teamwork, game strategy, physical condition, and decision-making during the match. According to Rizky *et al.*, (2025) , soccer is not merely a game that relies on physical ability; it also requires mental sharpness and a high level of strategic thinking. Every team is expected to be able to score goals while simultaneously defending its goal from the opponent's attacks.

With advances in technology and science in the field of sports, soccer match analysis is no longer based solely on direct observation but is also supported by the use of match data and statistics. In sports, statistics are a key component used to objectively assess the performance of teams and players (Fauzan, 2021). Various data—such as ball possession, number of shots, passing accuracy, and goal-scoring opportunities—are used to evaluate team performance more objectively. According to Castellano, Lago-Peñas, and Liu (2022), statistical analysis of games is an effective approach for identifying performance indicators that contribute to a team's success, and can therefore be used as a basis for developing strategies and evaluating games. The use of these statistical data benefits coaches, analysts, and players alike in formulating strategies, evaluating team weaknesses, and increasing the chances of achieving better match results (Triawan, Suarna, and Dikananda, 2024) . A study conducted by Perdana and Syafii(2024) titled "Analysis of *Ball Possession* and *Shooting* on the Match Results of the Indonesian U-20 National Team at *the* 2023 *Asian* Cup" showed that the variables of *ball possession* and *shooting* influence the match results of the Indonesian U-20 national team. Additionally, research by Hidayat *et al.*, (2024) , which analyzed statistical variables—including ball possession, shooting accuracy, the number of successful passes, and corner kicks—to predict the results of the 2023–2024 Indonesian Liga 1 season, showed that match statistics have a strong correlation with match outcomes.

In modern soccer, team performance is not only assessed based on the final match result but can also be analyzed and evaluated through various match statistics that reflect the quality of a team's play (Pamungkas *et al.*, 2023). Sarmento et al. (2022) explain that performance evaluation in modern soccer is conducted through a combination of various technical match indicators, making it important to comprehensively analyze the relationships among statistical variables. Based on research conducted by Bayrakdar, Boz, and Işildar, (2020) soccer performance can be analyzed using various indicators, such as points earned, number of wins, draws, and losses, as well as the number of goals scored and conceded. In addition, statistical data such as possession, passing accuracy, and the number of shots on goal can also be used to evaluate a team's performance throughout a competition. Analyzing team performance through match statistics is crucial for understanding the quality of play that contributes to a team's success in winning championships. Statistical data can provide valuable insights into a club's strengths and weaknesses, as well as performance trends over several years.

Professional soccer competitions in Indonesia continue to evolve, particularly through the organization of Liga 1 Indonesia as the top tier of national soccer. Competition among teams in Liga 1 demands that every club maintain consistent performance to achieve optimal match results and compete for the championship title. Liga 1 Indonesia is the top professional soccer league in Indonesia and features 18 clubs. The league is operated by PT Liga Indonesia Baru (LIB) and sponsored by Gojek. Liga 1 began in 2017 and consists of 34 matches per season (Isriwanto, 2022) . One team that has demonstrated consistent performance in the Indonesian Liga 1 is Persib Bandung. Persib Bandung won the Indonesian Liga 1 championship in the 2023/2024 and 2024/2025 seasons consecutively. This success demonstrates that Persib Bandung was able to maintain the quality of its play and consistent performance over two competitive seasons.

Persib Bandung's dominance in winning the championship is closely tied to the team's effectiveness on the field, as evidenced by various match statistics, such as possession, *pass accuracy*, and *shots on target*. Winning back-to-back championships demonstrates that Persib Bandung maintained strong consistency in performance throughout the competition. This achievement is worth examining because not all teams are able to maintain a stable level of play in a highly competitive league. Furthermore, Persib Bandung's performance during this period can be further analyzed through match statistics to understand the quality of play that supported the team's success in winning the Indonesian Liga 1 championship. A previous study conducted by Perdana and Syafii (2024), titled "Analysis of Ball Possession and Shooting on the Match Results of the Indonesian National Team at the 2023 Asian Cup," showed that the variables of ball possession and shooting influence match results. However, that study focused solely on the Indonesian U-20 National Team in a single tournament and analyzed only two variables. In contrast to that study, this research focuses on Persib Bandung in the 2023/2024–2024/2025 Indonesian Liga 1 season, adds the variable of passing accuracy, and employs binary logistic regression analysis to identify the statistical variables that most significantly influence match outcomes. Thus, this study is expected to provide more comprehensive information regarding the statistical factors that contribute to Persib Bandung's success. Therefore, this study was conducted to determine the relationship between match statistics and Persib Bandung's match results, as well as to analyze the statistical variables that most significantly influenced Persib Bandung's success in winning back-to-back Indonesian Liga 1 titles in the 2023/2024 and 2024/2025 seasons.

METHODS

This study employs a quantitative approach using descriptive and correlational methods. The descriptive method is used to analyze the statistical data of Persib Bandung's matches during the 2023/2024 and 2024/2025 Indonesian Liga 1 seasons, while the correlational method is used to determine the relationship between match statistics and Persib Bandung's match results. This study also employs multiple logistic regression analysis to identify the match statistics variables that most significantly influence Persib Bandung's success in achieving match results and winning consecutive Liga 1 championships over two seasons.

This study was conducted using data from Persib Bandung's matches in the 2023/2024 and 2024/2025 Indonesian Liga 1 seasons. The data sources for this study were secondary data, specifically match statistics obtained from the official New Indonesian League (LIB) platform and the SOCCERWAY website. The population in this study consists of all Persib Bandung matches in the Indonesian League for the 2023/2024 and 2024/2025 seasons. The sampling technique used was total sampling, meaning all available match data was used as the research sample, comprising a total of 72 matches.There are two types of variables in this study: independent variables and dependent variables. The independent variables in this study are Persib Bandung's match statistics in the 2023/2024 and 2024/2025 Indonesian Liga 1 seasons, consisting of ball possession, pass accuracy, and shots on goal. The dependent variable in this study is Persib Bandung's match results, classified as wins, draws, and losses. These results are measured using an ordinal scale with the categories: win = 1, and no win = 0.

The validity of the data in this study was ensured by using match statistics sourced from the official website and by conducting cross-checks to verify the accuracy and consistency of the data. The data used consists of objective and measurable match statistics, thereby ensuring a high level of accuracy. The data analysis techniques used in this study include descriptive statistical analysis and inferential analysis. The entire data processing was conducted using IBM SPSS Statistics 26 software. Bivariate analysis employed the Mann-Whitney U test ( ) to determine the relationship between match statistics and match outcomes. Multivariate analysis, meanwhile, utilized simple logistic regression to identify the match statistics variables that most significantly influenced Persib Bandung's success in winning consecutive Indonesian Liga 1 titles.

RESULTS AND DISCUSSION

This study was conducted from April to June 2026 and lasted three months. Research activities included data collection, data processing, and data analysis, all carried out systematically in accordance with the study's objectives. This study utilized secondary data obtained from the official website of the New Indonesian League (LIB) and the SOCCERWAY website. The data collected included match statistics and match results for Persib Bandung in the 2023/2024 and 2024/2025 seasons of the Indonesian Liga 1. The unit of analysis in this study was all matches played by Persib Bandung during the observation period. Therefore, this study did not involve respondents or informants through interviews.

Table 1. Results of the Bivariate Test of Match Statistics Analysis on Persib Bandung's Match Results, 2023–2025

Variable	Mean Rank for Losses	Mean Rank for Wins	p-value	Description
Ball Possession	38.95	34.42	0.360	Not significantly related
Passing Accuracy	34.55	38.15	0.464	No significant correlation
Shots on Goal	27.18	44.38	0.000	Significantly related

Based on the results of the Mann-Whitney test in **Table 1**, it is evident that the ball possession variable has a p-value of 0.360 ($p > 0.05$), indicating that there is no significant relationship between ball possession and Persib Bandung's match results for the 2023–2025 period. Although the non-winning group had a higher mean rank (38.95) compared to the winning group (34.42), this difference was not statistically significant. These results indicate that ball possession is not a factor that directly determines the match results of Persib Bandung in Liga 1. Theoretically, ball possession is one of the indicators frequently used to assess a team's dominance in a game. Ball possession has become one of the most prominent aspects in the development of modern soccer tactics (Rizky *et al*., 2025)). Teams with a higher percentage of ball possession tend to be able to control the pace of the game, reduce the opponent's opportunities to gain possession, and have a greater chance of building attacks. Research by Romadlon and Syafii,(2021) , found that teams with higher ball possession tend to win more matches than teams with low ball possession.

However, this study indicates that ball possession does not have a significant correlation with Persib Bandung's match results in the Indonesian Liga I. The lack of significance of ball possession in this study can be explained by the fact that the quality of ball possession is more important than the quantity of possession itself. A team can dominate possession for a long time, but if that possession occurs only in the defensive zone or midfield without creating dangerous scoring opportunities, its impact on the match outcome is limited. Conversely, a team with lower possession can win a match through quick and effective counterattacks. Ball possession is not a standalone strategy; it depends on cooperation among players, the quality of passes, the ability to read opponents' movements, and transition patterns from defense to attack and vice versa (Rizky *et al*., 2025).

The passing accuracy variable also showed a p-value of 0.464 ($p > 0.05$), indicating no significant relationship between passing accuracy and Persib Bandung's match results. The winning group had a mean rank of 38.15, but this difference was not statistically significant . The lack of a significant relationship between passing accuracy and Persib Bandung's match results indicates that a high success rate in passing does not necessarily lead to a victory. High passing accuracy may result from a high number of short passes in the defensive zone or midfield, which indirectly create scoring opportunities. This finding aligns with Collet's (2013) research, which states that ball possession dominance and passing success do not always correlate with match success, as the effectiveness of attacks and the ability to convert opportunities into goals are more decisive factors.

Meanwhile, the variable for shots on goal had a p-value of 0.000 ($p < 0.05$), indicating a significant relationship between the number of shots on goal and Persib Bandung's match

outcomes. The winning group had a higher mean rank (44.38) compared to the non-winning group (27.18). These results indicate that matches won by Persib Bandung tend to have a higher number of shots on goal compared to matches they did not win. This finding aligns with the concept that shots on goal serve as an indicator of offensive effectiveness and scoring opportunities. The more shots on goal a team takes, the greater its chances of scoring, which ultimately increases the likelihood of winning. Research by Gama Jose et al. (2016) states that shots on the opponent's goal influence the final match result; teams that have more shots on goal have a greater chance of winning. This finding is supported by a study by Aquino et al. (2023), which states that the effectiveness of shots on goal is one of the most consistent performance indicators in distinguishing between winning teams and non-winning teams in professional soccer competitions.

Table 2. Results of the Multivariate Statistical Analysis of Matches on Persib Bandung's Match Results, 2023–2025

Variables	B	Sig	Exp(B)
Ball Possession	-2.261	0.311	0.104
Passing Accuracy	-0.570	0.830	0.565
Shots on Goal	0.532	0.002	1.702

Based on the results of the binary logistic regression analysis in **Table 2**, the variable with the greatest influence on Persib Bandung's match results for the 2023–2025 period is shots on goal. This is indicated by a significance value of 0.002 ($p < 0.05$), demonstrating that this variable has a significant effect on match outcomes. Furthermore, the Exp(B) value of 1.702 indicates that every one-unit increase in shots on goal increases Persib Bandung's chances of winning by a factor of 1.702 compared to the baseline, assuming all other variables remain constant.

Meanwhile, the variables of ball possession ($p = 0.311$) and passing accuracy ($p = 0.830$) did not show a significant influence on match outcomes. Therefore, it can be concluded that shots on goal are the most dominant factor in determining the results of Persib Bandung's matches during the 2023–2025 period compared to ball possession and passing accuracy. The results of this study indicate that shots on goal are a more influential performance indicator for match outcomes than ball possession and passing accuracy. Although ball possession and passing accuracy are often considered indicators of dominance in a game, these two variables do not directly reflect a team's ability to create scoring opportunities and convert them into goals. A team may have high percentages of ball possession and passing accuracy, but if it is unable to convert these into dangerous opportunities and shots on target, such dominance will not have a significant impact on the final match result.

These findings are consistent with research showing that victory in soccer is determined more by offensive effectiveness than by dominance in ball possession. A study of UEFA Champions League matches from the 2022/2023 season found that teams can still win matches even when they lose the battle for possession, as long as they excel in the effectiveness *of their attempts on goal* and efficiently capitalize on opportunities (Romadlon and Syafii, 2021) . The study concluded that ball possession is not an absolute determinant of victory; rather, it must be accompanied by the ability to create effective scoring opportunities. Additionally, research by Anzer and Bauer,(2021) explains that shots on goal are the actions most directly linked to the probability of scoring a goal. Every shot on goal has the potential to result in a goal, so the frequency and quality of shots are key indicators of a team's success. Therefore, teams that are able to generate more shots on goal tend to have a greater chance of winning a match compared to teams that merely excel in ball possession or the number of successful passes.

The results of this study show that not all match statistics contribute equally to the outcome of a game. Although possession and passing accuracy are often used to describe a team's dominance on the field, these two variables do not show a significant correlation with Persib Bandung's match results. Conversely, shots on goal proved to be the variable most closely related to match outcomes because they have a more direct connection to the process of scoring goals, which determine the winnerThe results of this study show that not all match

statistics contribute equally to the outcome of a game. Although possession and passing accuracy are often used to describe a team's dominance on the field, these two variables do not show a significant correlation with Persib Bandung's match results. Conversely, shots on goal proved to be the variable most closely related to match outcomes because they have a more direct connection to the process of scoring goals, which determine the winner.

CONCLUSION

Based on the results of the research analysis, it can be concluded that ball possession and passing accuracy do not have a significant relationship with Persib Bandung's match results in the 2022–2025 Liga 1 season. Conversely, shots on target were found to have a significant relationship with match results. Furthermore, based on an analysis of the relationships between variables, shots on target were found to be the variable with the greatest influence on Persib Bandung's match results compared to ball possession and passing accuracy. Thus, the ability to generate accurate shots on target is the most decisive factor in Persib Bandung's success in achieving favorable match results in the 2022–2025 Liga 1 season.

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All authors contributed equally to the conceptualization, methodology, data collection, analysis, and drafting of the manuscript. All authors have read, revised, and approved the final manuscript for publication.

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The authors used Grammarly solely for grammar checking and language refinement during the preparation of this manuscript. No generative AI tools were used for data collection, analysis, or content creation. All scientific findings and conclusions were generated and verified entirely by the authors.

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

REFERENCES

Anzer, G., & Bauer, P. (2021). A goal scoring probability model for shots based on synchronized positional and event data in football (soccer). *Frontiers in Sports and Active Living*, *3*, Article 624475. https://doi.org/10.3389/fspor.2021.624475

Aquino, R., Carling, C., Vieira, L. H. P., Martins, G., Jabor, G., Machado, J., & Santiago, P. R. P. (2023). Match performance indicators associated with success in professional football. *Biology of Sport*, *40*(1), 181–191. https://doi.org/10.5114/biolsport.2023.112089

Bayrakdar, A., Boz, H. K., & Işildar, Ö. (2020). The investigation of the effect of static and dynamic core training on performance on football players. *Turkish Journal of Sport and Exercise*, *22*(1), 87–95. https://doi.org/10.15314/tsed.689994

Castellano, J., Lago-Peñas, C., & Liu, H. (2022). Performance indicators in football: A systematic review of match analysis research. *International Journal of Performance Analysis in Sport*, *22*(5), 650–678. https://doi.org/10.1080/24748668.2022.2104618

Effendi, A., Pratama, R., & Nugraha, D. (2021). Literature review: Hubungan koordinasi terhadap keterampilan menggiring bola pada pemain sepak bola. *Indonesian Journal of Physiotherapy*, *1*(1), 6–12. https://doi.org/10.52834/ijp.v1i1.5

Fauzan, M. N., & Bawono, M. N. (2021). Analisis statistik pertandingan tim nasional sepak bola Indonesia U-18 di Piala AFF 2019. *Jurnal Kesehatan Olahraga*, *9*(3), 371–380.

Gama, J., Dias, G., Couceiro, M., Sousa, T., & Vaz, V. (2016). Networks metrics and ball possession in professional football. *Complexity*, *21*(S2), 342–354. https://doi.org/10.1002/cplx.21812

Hidayat, R. R., Hermansyah, H., & Pratama, A. (2024). Analitik prediktif sepakbola: Model machine learning BRI Liga 1 Indonesia. *Multilateral: Jurnal Pendidikan Jasmani dan Olahraga*, *23*(4), 386–399. https://doi.org/10.20527/multilateral.v23i4.18420

Isriwanto, H. R. (2022). Analisis kebutuhan prediksi pertandingan Bundesliga menggunakan metode Fuzzy. *Jurnal Ilmiah Informatika dan Komputasi*, *1*(1), 1–8.

Pamungkas, H., Kusuma, I. D., & Nugroho, S. (2023). Small side game training contribution of volume oxygen maximum football players Elite Pro Academy. *Jurnal Sportif: Jurnal Penelitian Pembelajaran*, *8*(1), 129–136. https://doi.org/10.29407/js_unpgri.v8i1.19820

Perdana, B. A., & Syafii, I. (2024). Analisis performa fisik dan teknik pemain sepak bola. *JPO: Jurnal Prestasi Olahraga*, *7*(1), 84–89.

Rizky, E., & Syafii, I. (2025). Analisis strategi penguasaan bola (possession) sebagai taktik dominasi permainan. *Jurnal Prestasi Olahraga*, *2*(3), 115–124.

Romadlon, F. R., & Syafii, I. (2021). Analisis penguasaan bola (ball possession) pada pertandingan UEFA Champions League dan UEFA Europa League 2020-2021. *JPO: Jurnal Prestasi Olahraga*, *4*(3), 117–132.

Sarmento, H., Clemente, F. M., Araújo, D., Davids, K., McRobert, A., & Figueiredo, A. (2022). Performance analysis in football: Current approaches and future directions. *Sports Medicine - Open*, *8*(1), Article 38. https://doi.org/10.1186/s40798-022-00428-w

Triawan, E., Suarna, N., & Dikananda, A. R. (2024). Klasifikasi tipe penyerang sepak bola Liga Inggris berdasarkan data statistik pemain menggunakan metode Naive Bayes. *Jurnal Infotama*, *8*(2), 1809–1814.