DIPONEGORO JOURNAL OF ECONOMICS *Volume 14, Nomor 2, Tahun 2025,halaman 1-10*
https://ejournal3.undip.ac.id/index.php/jme/index *ISSN (Print) : 2337-3814*

ANALYSIS OF FACTORS AFFECTING MARKET VALUE OF PROFESSIONAL FOOTBALL PLAYERS IN INDONESIA

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ABSTRACT

The market value of professional football players is influenced by multiple factors, including performance metrics, age, position, and club reputation. This study examines the determinants of player market value using data from Indonesian professional football players listed on Transfermarkt from 2021 to 2024. The study employs multiple linear regression analysis to evaluate the relationship between market value and independent variables such as age, player position, total goals, assists, number of league cups, number of substitutions, and own goals. Findings indicate that age, total goals, and assists significantly affect market value, while factors like player position and league cups have a moderate influence. The study highlights the unique characteristics of the Indonesian football market compared to European leagues, where age and disciplinary records have lesser significance. The results provide insights for club management, investors, and policymakers in optimizing player valuation strategies.

Keywords: Market Value, Professional Football Player, Indonesian League, Multiple Linear Regression

INTRODUCTION

Market value in football represents a player's estimated worth based on performance, skills, and economic factors. In European leagues, a player's performance is often the dominant factor in determining their market value, with top players like Kylian Mbappé or Erling Haaland reaching valuations of over €150 million. However, in the Indonesian football market, player valuation is more diverse, with factors such as age, position, and club reputation playing a significant role. For instance, local players with consistent performances in Liga 1 Indonesia may have a market value ranging from IDR 2 billion to IDR 10 billion, while foreign or naturalized players with international experience can command even higher figures.

This study aims to identify the key factors influencing the market value of professional football players in Indonesia and how clubs determine their valuations. Football is a multi-billion-rupiah industry, where clubs generate revenue from ticket sales, broadcasting rights—potentially worth hundreds of billions of rupiah—sponsorships, and merchandise sales. Player valuation not only impacts transfer strategies but also affects club financial reporting and investment decisions. To analyze player valuation mechanisms, this study applies human resource accounting theory and signaling theory, which help explain how player-related information is communicated to the market and influences their value.

LITERATURE REVIEW

The market value of professional football players is influenced by multiple factors, including performance metrics, age, and league status. Previous studies have explored these determinants in various football leagues worldwide, revealing both similarities and unique attributes in different contexts. In Indonesia, player valuation differs from European leagues due to varying market dynamics, cultural influences, and financial structures.

Athletic ability plays a significant role in determining a player's market value. Michailidis (2014) and Cabral de Andrade et al. (2020) emphasized the importance of technical, cognitive, and psychological abilities in market valuation. Williams & Reilly (2010) further analyzed environmental training factors, while Lago-Peñas et al. (2016) investigated injury history as a determinant. Kalen et al. (2019) and Oterhals et al. (2021) found that players between 21-30 years commanded higher market values than younger or older players.

In European leagues, research by Anderson & Sally (2013) indicated that the peak market value of Premier League players occurs at age 26. However, in the Indonesian context, Adiwiyana & Harymawan (2021) found an inverse correlation between age and market valuation, suggesting that younger players receive higher valuations due to long-term potential. This aligns with research by Kaukab & Falah (2021), which highlights the significance of remaining contract duration in determining player worth.

The impact of player position on market value remains a debated topic. Kalen et al. (2019) concluded that forwards generally secure higher valuations than defenders due to their goal-scoring contributions. However, Adiwiyana & Harymawan (2021) found that position had no statistically significant effect in the Indonesian market, implying that other factors, such as individual performance and club prestige, might be more influential.

Several studies highlight the effect of club status on market value. Putra & Devi (2021) suggested that higher-scoring clubs indirectly influence player valuations by increasing visibility and sponsorship opportunities. However, Adiwiyana & Harymawan (2021) and Kaukab & Falah (2021) argued that club success alone does not significantly impact player valuation, as market perception and individual performance remain the primary determinants.

Other performance indicators, such as total goals, assists, and league cups, have been shown to positively influence player market value. Salahudin (2022) confirmed that goal-scoring capabilities are crucial in determining a player's worth. Poli et al. (2021) found that assists contribute significantly to valuation, as players involved in goal creation receive higher recognition. Additionally, Majewski (2016) and Filipe (2020) suggested that players with multiple league cup titles often have a higher market value due to their competitive experience and achievements.

Conversely, factors such as total substitutions and own goals have varying effects. Carretero & Sánchez-Sánchez (2022) found no significant impact of substitutions on market value, aligning with Indonesian league data where highly substituted players had inconsistent valuation patterns. However, Adiwiyana & Harymawan (2021) noted that own goals negatively affect player valuation, reinforcing the idea that mistakes and poor performance indicators can diminish a player's financial worth.

This study has several hypothesis which can be explained as follows:

H1: Age has a significant positive effect to the market value of professional football players.
H2: Player Position has no significant effect to the market value of professional football players.
H3: Score Club has no significant effect to the market value of professional football players.
H4: Total Goals has a significant positive effect to the market value of professional football players.
H5: Total Assists has a significant positive effect to the market value of professional football players.
H6: Total League Cups has a significant positive effect to the market value of professional football players.
H7: Total Substitutes has no significant effect to the market value of professional football players.
H8: Total Own Goals has a significant positive effect to the market value of professional football players.

RESEARCH METHODS

This study uses a quantitative method with secondary data collected from 544 professional football players in BRI Liga 1 during three seasons (2021–2024). The study aims to analyze factors influencing player market value using various statistical methods. The details of the variables used in this research are outlined in the table below.

Table 1. Data Variables

Variables	Description	Measurement Scale	Source
Market Value (Y)	The estimated worth of professional football players, reflecting transfer market conditions.	Ratio	www.transfermarkt.com
Age (X1)	The number of years since the player's birth.	Interval	www.transfermarkt.com
Player Position (X2)	The role played by the footballer on the field (e.g., Forward, Midfielder, Defender, Goalkeeper).	Ordinal	www.transfermarkt.com
Score Club (X3)	Total points accumulated by the player's club in Liga 1.	Ratio	www.transfermarkt.com
Total Goals (X4)	The number of goals scored by the player in a season.	Ratio	www.transfermarkt.com

Total Assists (X5)	The number of assists provided by the player in a season.	Ratio	www.transfermarkt.com
Total League Cups (X6)	The number of official trophies won by the player's club.	Ratio	www.transfermarkt.com
Total Substitutes (X7)	The number of times a player has been substituted off during matches in a season.	Ratio	www.transfermarkt.com
Total Own Goals (X8)	The number of own goals scored by a player in a season.	Ratio	www.transfermarkt.com

This study applies a descriptive statistical analysis to provide an overview of the dataset, followed by classic assumption tests to check data normality, multicollinearity, and heteroscedasticity. Finally, the study employs multiple linear regression analysis to examine the impact of independent variables on market value.

The research utilizes secondary data from www.transfermarkt.com, one of the most credible sources for football statistics and market values. The dataset includes player performance metrics, club scores, and historical trends over three seasons. We using descriptive statistical analysis to provides summary statistics such as mean, minimum, and maximum values of the variables. And also using classic assumption tests, such as normality test for ensuring that data is normally distributed. Multicollinearity test to identify if independent variables are highly correlated. Heteroscedasticity test to Examine whether there is a systematic variance in residual errors. According to the multiple linear regression analysis the study employs the following regression model to analyzing the influence of independent variables on market value:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \epsilon$$

Where:

- Y = Market Value
- X_1 = Age
- X_2 = Player Position
- X_3 = Score Club
- X_4 = Total Goals
- X_5 = Total Assists
- X_6 = Total League Cups
- X_7 = Total Substitutes
- X_8 = Total Own Goals
- β_0 = Constant
- ϵ = Error term

RESULTS AND DISCUSSION

The Descriptive statistical analysis provides an overview of the dataset by summarizing the mean, standard deviation, minimum, and maximum values. These

statistics help to understand the characteristics of Indonesian professional football players and their market value.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Market Value (Y)	544	2288.83	1676.87	0	7820
Age (X_1)	544	26.08	4.93	16	41
Player Position (X_2)	544	5.42	3.38	1	12
Score Club (X_3)	544	9.63	5.19	1	18
Total Goals (X_4)	544	0.91	1.93	0	14
Total Assists (X_5)	544	0.65	1.40	0	13
Total League Cups (X_6)	544	0.77	1.31	0	11
Total Substitutes (X_7)	544	6.02	5.95	0	23
Total Own Goals (X_8)	544	0.02	0.16	0	2

The market value of professional football players in Indonesia varies significantly, ranging from 0 to 7.82 billion IDR. The average player is 26 years old, with most players between 21-30 years old, which aligns with Kalen et al. (2019) and Oterhals et al. (2021), who found that players in this age range typically command the highest market values. The average number of goals per player is 0.91, which is relatively low compared to European leagues, where goal-scoring ability significantly influences market value.

Before running regression analysis, normality, multicollinearity, and heteroscedasticity tests were conducted to ensure the validity of the model. The normality test (Skewness/Kurtosis) showed that the residuals are normally distributed (Prob > chi2 = 0.0519). The multicollinearity test (VIF) confirmed that there is no strong correlation between independent variables, as all VIF values are below 10. Finally, the heteroscedasticity test (Breusch-Pagan/Cook-Weisberg) indicated that the model does not suffer from heteroscedasticity (Prob > chi2 = 0.06).

Table 3. Multiple Linear Regression Analysis

Variable	Coef.	t	P>t
Age (X_1)	47.52	3.82	0.000
Player Position (X_2)	-26.09	-1.52	0.130
Score Club (X_3)	-17.90	-1.63	0.103
Total Goals (X_4)	196.64	5.28	0.000
Total Assists (X_5)	340.56	6.56	0.000
Total League Cups (X_6)	209.73	4.48	0.000
Total Substitutes (X_7)	11.43	1.11	0.266
Total Own Goals (X_8)	1199.74	3.44	0.001
_cons	701.24	1.98	0.05

The model is statistically significant (Prob > F = 0.00) with $R^2 = 0.40$, meaning it explains 40% of the variance in market value. Variables Age, Total Goals, Total Assists, League Cups, and Own Goals have a significant positive effect on market value, supporting signaling theory, which suggests that clubs and investors prioritize high-performing players.

The findings confirm that age positively influences market value. Players aged 21-30 are most valued due to their peak physical performance. This aligns with Kaukab & Falah (2021), who found that younger players with longer contracts attract higher valuations. Contrary to expectations, player position does not significantly impact market value in Indonesia. This contradicts findings in European leagues, where forwards typically hold the highest values. However, Adiwiyana & Harymawan (2021) support this result, suggesting that individual performance is a stronger determinant.

The study finds that team ranking does not significantly affect player market value, differing from Van den Berg (2021), who noted that club prestige influences European player valuations. Scoring goals significantly increases player value, aligning with Salahudin (2017), who found that goal-scoring ability is a key determinant in professional football. Players who contribute assists have higher market values. This result is consistent with Poli et al. (2021), who found that creative midfielders and playmakers are highly valued in the transfer market.

Winning league titles positively affects player market value, supporting research by Putra & Devi (2021), which found that players with championship experience attract higher transfer fees. The study finds that total substitutions do not significantly affect market value, aligning with Carretero & Sánchez-Sánchez (2022), who suggested that frequent substitutions do not necessarily lower a player's worth. Surprisingly, own goals have a significant impact the market value. This result aligns with Adiwiyana & Harymawan (2021), who found that own goals do not necessarily reduce market value if the player has other strong attributes.

This study confirms that Age, Total Goals, Assists, League Cups, and Own Goals positively impact market value in Liga 1 Indonesia, while Player Position, Score Club, and Substitutions are not significant. These findings contribute to understanding how Indonesian football clubs value players differently from European leagues, with a greater emphasis on individual performance rather than club status.

CONCLUSION

This study analyzed 544 professional football players from BRI Liga 1 (2021-2024) to determine the key factors affecting market value. The findings reveal that the average market value of a player is IDR 2.28 billion, with values ranging from IDR 0 to IDR 7.82 billion. Age, Total Goals, Total Assists, Total League Cups, and Total Own Goals significantly impact market value, while Player Position, Score Club, and Total Substitutes do not. Players aged 21-30 tend to have higher market values, aligning with global trends.

Each additional goal scored increases market value by approximately IDR 196.64 million, while each assist contributes IDR 340.56 million. Players with more league cup wins also see an average increase of IDR 209.73 million per title. Surprisingly, own goals were found to increase market value by IDR 1.19 billion, suggesting that overall player reputation and skills outweigh occasional mistakes.

Future research should track market value trends over at least five seasons and compare Liga 1 with EPL, La Liga, or J-League to assess valuation differences. Additional variables like sponsorships, contract duration, and international appearances could refine valuation models. Clubs and investors should focus on

young, high-scoring players, as players in this category typically hold market values exceeding IDR 2 billion.

This study is limited to Liga 1 Indonesia (2021-2024) and does not account for external economic conditions, transfer market fluctuations, or global football industry trends. Additionally, with an R^2 of 40%, other unexamined factors influence player valuation. Future research should expand the dataset to over 1,000 players across multiple leagues and include qualitative insights from club managers and sports agents

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