

Forecasting Public Interest Toward FIFA World Cup 2026 in Indonesia Using Google Trends and ARIMA Model

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Abstract: Public interest in major international sporting events can be examined through online search behavior, which provides an indication of public attention and anticipation. This study aimed to analyze and forecast public interest in the FIFA World Cup 2026 in Indonesia using Google Trends data. Weekly search data from June 2021 to May 2026 were collected from Google Trends, focusing on the keyword "FIFA World Cup 2026" and related search terms. A quantitative time-series approach was employed, including descriptive statistics, correlation analysis, the Augmented Dickey-Fuller (ADF) stationarity test, Autocorrelation Function (ACF) and Partial Autocorrelation Function (PACF) analyses, and Autoregressive Integrated Moving Average (ARIMA) modeling. The results showed that search interest increased as the tournament approached, with several notable spikes observed during 2024–2026. Descriptive statistics indicated substantial fluctuations in search activity, while the ADF test confirmed that the series was stationary, with an ADF statistic of -8.1497 and a probability value below 0.05. Several ARIMA specifications were evaluated, and ARIMA(1,0,2) was identified as the selected forecasting model based on the lowest Akaike Information Criterion ($AIC = 8.1480$) and Schwarz Criterion ($SC = 8.2162$) values. Forecast evaluation produced an RMSE of 16.482, an MAE of 10.525, and a Theil Inequality Coefficient of 0.571. The forecasting results suggest that search interest in the FIFA World Cup 2026 will remain elevated as the tournament approaches. These findings indicate that Google Trends data combined with ARIMA modeling can be used to analyze and forecast search-interest patterns related to major international sporting events.

Keywords: Google Trends; FIFA World Cup 2026; Public Interest; ARIMA; Time Series Forecasting.

1. Introduction

The FIFA World Cup is widely recognized as one of the largest international sporting events, attracting substantial global attention and generating extensive media and audience engagement (Horky et al., 2020). Beyond its role as a global football competition, the tournament has broader social, cultural, and economic significance and attracts audiences from different countries and regions (Gholipour et al., 2020). The widespread popularity of the FIFA World Cup can be observed not only through television audiences and stadium attendance but also through the increasing volume of digital activity surrounding the event. As digital technologies continue to change how people obtain and consume information, audiences increasingly use

online platforms to follow major sporting events, search for relevant information, and respond to developments surrounding tournaments. Digital activities such as web searches, social media engagement, and digital content consumption have therefore become important indicators of how audiences interact with major sporting events (Lee Ludvigsen & Petersen-Wagner, 2023). The FIFA World Cup provides a relevant setting for examining these patterns because the tournament generates sustained international attention before, during, and after the event.

The development of internet connectivity and digital technologies has changed how people access information about international sporting events. Instead of depending only on television, newspapers, and other traditional media, audiences can use search engines and online platforms to obtain information about teams, schedules, tickets, match developments, and other tournament-related topics. This change has produced large amounts of digital trace data that can be used to examine information-seeking behavior. Online platforms therefore provide researchers with opportunities to observe changes in audience attention over time, particularly when public interest is influenced by announcements, news coverage, match-related developments, or other event milestones (Chen, 2025). For major sporting events, changes in online search activity may provide an additional source of information for understanding how audience attention develops as the event approaches.

Internet search behavior can be used as an indicator of information-seeking activity toward particular events and issues. Search activities generate digital traces that allow researchers to examine changes in attention across different periods and locations. Previous studies have shown that changes in search activity can be associated with changes in public attention and information-seeking behavior in areas such as health, environmental issues, and other social phenomena (Álvarez-García *et al.*, 2023; Gong *et al.*, 2022). Search data can therefore provide useful information about patterns of online attention and the topics that attract greater interest at particular points in time. However, search activity should be interpreted as an indicator or proxy of public attention rather than as a direct measurement of individual attitudes or opinions. This distinction is particularly relevant when search data are used to represent public interest in a large population.

Google Trends is one of the platforms commonly used to examine online search behavior. It provides historical information about the relative popularity of search queries across selected locations and periods. Google Trends data have been applied in various fields, including health, economics, tourism, social sciences, and disaster management, to examine changes in information-seeking behavior and public attention (Stimpson *et al.*, 2026). An important characteristic of Google Trends is that its Search Volume Index (SVI) represents relative search interest on a scale from 0 to 100 rather than absolute numbers of searches. This allows researchers to compare changes in search interest within a selected period and geographical region. Previous research has demonstrated that Google Trends can provide useful information for examining changes in public attention and online behavior across different research contexts. Its availability of historical search-interest data also makes it suitable for time-series analysis when the objective is to examine how search interest changes over time.

Google Trends has also been applied to research on major sporting events, including the FIFA World Cup and other international competitions. Previous studies have examined search patterns and audience engagement surrounding sporting events, although much of this research has focused on describing historical changes in online interest rather than forecasting future search behavior (Gholipour *et al.*, 2020). At the same time, Google Trends has been used in other research areas for forecasting applications, including tourism demand and other time-dependent phenomena. For example, previous research has demonstrated the potential of Google Trends data for analyzing tourists' online search behavior and supporting demand forecasting (Höpken *et al.*, 2019). These studies indicate that search-interest data can be used not only to describe past online behavior but also as input for time-series forecasting models.

Time-series forecasting is particularly relevant when search interest changes over time and contains recurring fluctuations or event-related spikes. The Autoregressive Integrated Moving Average (ARIMA) model is one of the established approaches for forecasting time-series data and has been applied to different types of demand, search, and digital behavior data. ARIMA provides a statistical framework for modeling temporal dependence in historical observations and generating forecasts based on the observed patterns. Although more recent approaches, including Prophet, LSTM, and hybrid models, have also been applied to time-series forecasting, ARIMA remains a commonly used method because of its interpretability and suitability for historical time-series data.

Despite the growing use of Google Trends for examining online attention, research that specifically combines Google Trends data with time-series forecasting for major international sporting events remains limited. Previous studies have largely emphasized descriptive analysis of search behavior and audience engagement, while forecasting applications have more commonly been reported in fields such as tourism, economics, and consumer behavior. In addition, studies specifically examining public search interest in the FIFA World Cup 2026 remain limited, particularly in the Indonesian context. The specific combination of

Indonesia as the geographical setting, FIFA World Cup 2026 as the event, Google Trends as the data source, and ARIMA as the forecasting method provides a more focused research setting.

To address this gap, the present study uses Google Trends data to analyze and forecast search interest related to the FIFA World Cup 2026 in Indonesia. Weekly search-interest data are examined using descriptive statistics, correlation analysis, stationarity testing, ACF and PACF analysis, and ARIMA modeling. The study is intended to provide empirical evidence regarding changes in online search interest and the potential of ARIMA to forecast search-interest patterns surrounding a major international sporting event. By focusing on the Indonesian context, the study extends previous research on digital search behavior and sporting events while providing a forecasting-based analysis of public search interest toward the FIFA World Cup 2026.

2. Related Work

2.1 Google Trends as a Source of Public Interest Data

Google Trends is a web-based platform developed by Google that provides information on the relative popularity of search queries across different regions and periods. The platform has been widely used to examine information-seeking behavior and changes in public attention across fields such as health, economics, tourism, and social sciences. One of its main indicators is the Search Volume Index (SVI), which represents the relative search interest of a term on a scale from 0 to 100. A value of 100 represents the highest search interest for the selected term within the specified period and geographical area, rather than an absolute number of searches (Moon & Barlev, 2024). Google Trends offers several advantages for research. Its historical data allow researchers to examine changes in search interest over time, while its geographical coverage enables comparisons across locations. In addition, search data reflect actual online search activity rather than responses obtained through self-reported surveys. Nevertheless, Google Trends has limitations, including the absence of absolute search volumes, potential sampling and representation biases, and limited transparency regarding some aspects of its data processing. These limitations require careful interpretation of search-interest data. Despite these constraints, Google Trends can provide a useful source for examining changes in online attention toward major events, including international sporting competitions.

Public interest refers to the level of attention and information-seeking activity directed toward a particular topic, event, or issue. In an online environment, part of this activity can be observed through search behavior because individuals often use search engines to obtain information about topics that are relevant to them. Search query data can therefore serve as a proxy for collective online attention and information-seeking behavior. Google Trends reports this activity through the Search Volume Index (SVI), with higher values representing higher relative search interest within the selected period and location. Previous studies have applied Google Trends to examine public attention and information-seeking behavior in areas such as health, economics, tourism, political issues, and sporting events (Jun *et al.*, 2018; Mavragani & Ochoa, 2019). These applications indicate that changes in search interest can provide information about how online attention develops over time. However, search interest should not be interpreted as a direct measurement of individual attitudes or opinions. In this study, therefore, public interest is operationally defined as the level of search interest related to the FIFA World Cup 2026, as reflected by Google Trends data.

Google Trends has been applied across various research domains to examine changes in information-seeking behavior and online attention. In health research, it has been used to monitor search activity associated with disease outbreaks, mental health, and health-related information needs (Ting & Chen, 2025). In economics and business research, Google Trends data have been applied to examine consumer behavior, market conditions, and financial trends (Zayed *et al.*, 2023). Tourism research has also used search-interest data to examine destination-related interest and tourism demand (Dinis *et al.*, 2019; Ting & Chen, 2025). The use of Google Trends across these fields demonstrates its potential for examining temporal changes in online search behavior. These studies also show that the usefulness of Google Trends depends on the research context, selected search terms, geographical scope, and observation period. For research on major international events, the platform can therefore provide historical search-interest data that help identify periods of increased or decreased online attention.

Google Trends can also be used to examine behavioral patterns through digital trace data. Historical search-interest data enable researchers to observe how online attention changes across topics, locations, and periods. Previous studies have shown that search trends can provide indicators of public awareness and information-seeking responses to significant events (Lenart, 2024; Mangono *et al.*, 2021). Compared with traditional survey methods, Google Trends provides access to observed online search activity and can cover broad populations without requiring direct responses from individual participants. It has consequently been applied in areas such as health, economics, tourism, disaster management, and social research (Erokhin & Komendantova, 2024). At the same time, the absence of absolute search volumes and limitations in data transparency mean that the results should be interpreted as patterns of relative search interest rather than

direct measures of population attitudes. For international sporting events, these data can be useful for examining changes in audience attention and information-seeking behavior surrounding major competitions such as the FIFA World Cup.

2.2 Google Trends Applications in Sports Events

International sporting events such as the FIFA World Cup, Olympic Games, and UEFA European Championship attract substantial international attention because of their global visibility, competitive importance, and extensive media coverage. The FIFA World Cup, in particular, generates considerable interest across countries and regions (Adelowo, 2022). The scale of these events creates substantial opportunities for audiences to seek information about teams, players, schedules, results, and other event-related topics. The development of digital communication has further expanded opportunities for audiences to access and respond to event-related information. Media coverage, websites, social media, and search engines allow audiences to follow developments during different stages of a competition (Pigman, 2014). Previous research has also shown that major sporting events can be associated with increased audience activity across television, social media, and online search platforms (Papanikos, 2023). These patterns indicate that digital search behavior can provide an additional source of evidence for examining changes in audience attention surrounding international sporting events.

Digital technologies have changed how audiences engage with major sporting events. In addition to consuming traditional media, audiences increasingly use websites, social media, and search engines to obtain information, follow event developments, and interact with event-related content (Lee & Na, 2024). Such activities create digital traces that can be examined to understand changes in audience engagement over time. Previous studies indicate that digital engagement during sporting events can be influenced by factors such as team performance, event significance, media exposure, and fan identification (Cheng & Wu, 2025; Kim & Kim, 2026). These forms of engagement include social media participation, content sharing, and online search activity. Among these sources, search-engine data provide a direct way to examine changes in relative search interest. Google Trends can therefore be used to analyze search-interest patterns associated with major sporting competitions, including the FIFA World Cup.

Major sporting events can also affect tourism and destination visibility by attracting visitors and generating international media exposure (Abdollahi et al., 2024; Constantinescu & Ungureanu, 2024). Event-related information can encourage online searches concerning host destinations, tourist attractions, and other travel-related topics (Avelar et al., 2021; Cao, 2023). These patterns demonstrate that sporting events can generate search activity beyond the competition itself. Research on tourism also provides relevant evidence for the use of Google Trends in forecasting. Previous studies have used search-interest data to examine tourism demand and related online behavior (Dinis et al., 2019; Höpken et al., 2019). Although the present study does not forecast tourism demand, this body of research supports the broader use of Google Trends as a time-dependent source of information for forecasting applications.

2.3 Forecasting Public Interest Using Time-Series Models

Forecasting search interest can help researchers examine how online attention may change over time. Time-series forecasting models use historical observations to identify temporal patterns and generate estimates of future observations. Among these approaches, the Autoregressive Integrated Moving Average (ARIMA) model is widely used for time-series forecasting because of its interpretable structure and suitability for modeling temporal dependence in historical data. Previous studies have applied ARIMA and other time-series approaches to search behavior, consumer demand, tourism activity, and other digital trends. Google Trends data have also been incorporated into forecasting models to capture changes in online information-seeking behavior and support predictions of time-dependent demand (Höpken et al., 2019). More recent research has introduced approaches such as Prophet, LSTM, and hybrid models to address complex nonlinear or seasonal patterns (Albahli, 2025; Liang & Li, 2025). These methods provide alternatives for forecasting, while ARIMA remains useful as an interpretable statistical approach for univariate time-series analysis. For the present study, ARIMA is used to model weekly Google Trends search-interest data and generate forecasts for the FIFA World Cup 2026. The model-selection process is based on the characteristics of the observed series and the statistical criteria described in the Methodology section.

2.4 State-of-the-Art Research and Research Gap

Previous studies have used Google Trends to examine online attention associated with major sporting events, including the FIFA World Cup and other international competitions. Much of this research has focused on describing historical search patterns and audience engagement, while forecasting applications using Google Trends have been more commonly reported in areas such as tourism, economics, and consumer behavior. Other recent studies have applied advanced forecasting methods, including Prophet, LSTM, and hybrid approaches, to different time-series problems. Several gaps can therefore be identified. First, existing research

on sporting events has generally emphasized the description of historical online interest rather than forecasting future search-interest patterns. Second, studies that combine Google Trends with time-series forecasting in the context of international sporting events remain limited. Third, research specifically examining search interest related to the FIFA World Cup 2026 in Indonesia is limited. The present study addresses these gaps by using Google Trends data from Indonesia and applying ARIMA to analyze and forecast weekly search-interest patterns related to the FIFA World Cup 2026. The contribution of this study lies in its focus on the combination of a specific international sporting event, a specific geographical context, and a time-series forecasting approach. Rather than examining only historical search patterns, the study evaluates the potential of ARIMA to forecast changes in search interest surrounding the FIFA World Cup 2026 in Indonesia. Table 1. Comparison of Related Studies on Web Attack Detection.

Table 1. State-of-the-Art Research and Research Gap Analysis

Author	Topic	Data Source	Method	Limitation / Research Relevance
Gholipour et al. (2020)	Sports performance and tourism during FIFA World Cup events	Tourism and sports-related data	Panel data analysis	Focuses on tourism effects rather than online public-interest forecasting
Lee Ludvigsen & Petersen-Wagner (2023)	Digitalized sport and mega-events and platform media	Digital media platforms	Qualitative/media analysis	Focuses on digital media transformation rather than forecasting search interest
Höpken et al. (2019)	Tourism demand and online search behavior	Google Trends and tourism data	Autoregressive forecasting	Focuses on tourism demand rather than sporting-event public interest
Liang & Li (2025)	Mobile payment user growth forecasting	Time-series data	Time-series and hybrid forecasting	Different application domain
Albahli (2025)	Electricity demand forecasting	Electricity demand time-series data	Prophet and LSTM	Different application domain
This Study	Public interest in FIFA World Cup 2026 in Indonesia	Google Trends	ARIMA	Forecasts online public interest toward a major international sporting event

Source: Authors' compilation based on the reviewed literature.

3. Methodology

3.1 Research Design

This study employed a quantitative approach using secondary data obtained from Google Trends. The study aimed to analyze and forecast public interest in the FIFA World Cup 2026 in Indonesia using time-series analysis. Google Trends data were selected because they provide historical information on online search behavior and can be used as a proxy for examining changes in public attention toward specific events. In this study, public interest is operationally represented by the Google Trends Search Volume Index (SVI).

3.2 Data Collection

The data were collected from Google Trends by selecting Indonesia as the geographical region and using weekly search-interest data covering the period from June 2021 to May 2026. Four search keywords were used to represent search interest related to the FIFA World Cup 2026: "FIFA World Cup 2026" as the main keyword and "FIFA," "World Cup Schedule," and "World Cup Tickets" as supporting keywords.

Table 2. Research Variables and Data Sources

Item	Description
Data Source	Google Trends
Region	Indonesia
Observation Period	June 2021–May 2026
Frequency	Weekly
Main Variable	Public interest

Operational Definition	Google Trends Search Volume Index (SVI)
Main Keyword	FIFA World Cup 2026
Supporting Keywords	FIFA; World Cup Schedule; World Cup Tickets
Number of Observations	261
Search Index Range	0–100
Unit of Measurement	Relative Search Volume Index (SVI)

Source: Google Trends data, processed by the authors (2021–2026).

In this study, public interest is operationally represented by the Google Trends SVI. The SVI ranges from 0 to 100, where a value of 100 represents the highest relative search interest for the selected keyword within the specified period and geographical region. The weekly dataset from June 2021 to May 2026 contains 261 observations for each keyword.

3.3 Proposed Research Framework

The proposed research framework consists of a sequence of procedures beginning with Google Trends data collection and continuing through data preparation, descriptive statistical analysis, correlation analysis, stationarity testing, ARIMA model identification and estimation, model selection, forecast evaluation, and forecasting of search interest related to the FIFA World Cup 2026.

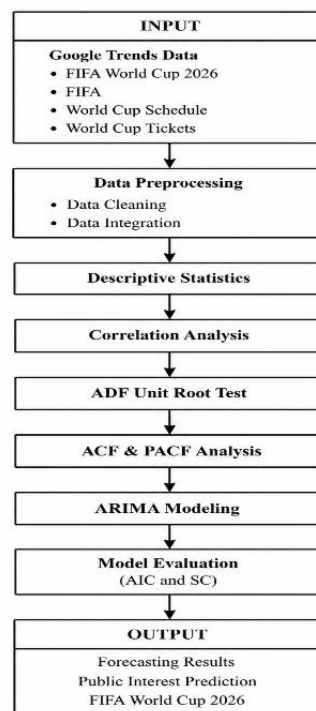


Figure 1. Proposed Research Framework

The research process begins with the collection of Google Trends data for Indonesia. The collected data are then prepared for time-series analysis and examined using descriptive statistics and correlation analysis. The Augmented Dickey-Fuller (ADF) test is subsequently applied to assess the stationarity of the time series. ACF and PACF analyses are used to identify candidate ARIMA parameters. Several ARIMA specifications are then estimated and compared using the Akaike Information Criterion (AIC) and Schwarz Criterion (SC). The selected model is subsequently evaluated using forecast-error measures, including RMSE, MAE, and the Theil Inequality Coefficient, before being used to generate the forecasting results.

3.4 Data Analysis Techniques

This study employs descriptive statistics, correlation analysis, stationarity testing, ARIMA modeling, model-selection criteria, and forecast-evaluation measures to analyze and forecast search interest related to the FIFA World Cup 2026. Descriptive statistics are used to examine the characteristics and distribution of the Google Trends search-interest data. Correlation analysis is used to examine the relationships among the search-interest series represented by the selected keywords. The Augmented Dickey-Fuller (ADF) test is applied to determine whether the time series is stationary. ACF and PACF analyses are then used to identify candidate values for the autoregressive and moving-average components of the ARIMA model. Several ARIMA specifications are estimated and compared using the Akaike Information Criterion (AIC) and Schwarz Criterion

(SC). The model with the most appropriate statistical performance based on these criteria is selected as the forecasting model. Forecast performance is subsequently assessed using the Root Mean Square Error (RMSE), Mean Absolute Error (MAE), and Theil Inequality Coefficient. The selected ARIMA model is then used to generate forecasts of search interest related to the FIFA World Cup 2026 in Indonesia.

4. Result and Discussion

4.1 Results

4.1.1 Search Interest Trend Analysis

The search-interest trend for the FIFA World Cup 2026 in Indonesia was analyzed using weekly Google Trends data from June 2021 to May 2026. Figure 2 illustrates the changes in search interest throughout the observation period.

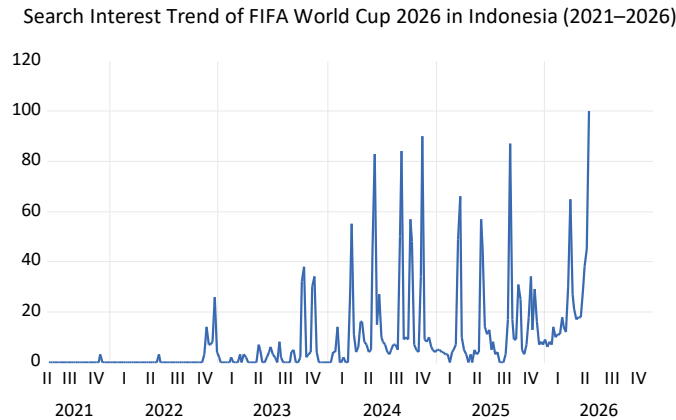


Figure 2. Search Interest Trend of FIFA World Cup 2026 in Indonesia (2021–2026)
Source: Google Trends (2021–2026), processed by the authors using EVIEWS 13.

Figure 2 shows that search interest in the FIFA World Cup 2026 was relatively low during 2021 and 2022. Beginning in 2023, search activity increased gradually and became more volatile. Several noticeable spikes occurred during 2024 and 2025, indicating periods of increased search activity related to the tournament. The highest search intensity was observed in early 2026, approaching the maximum Google Trends index value of 100. Overall, the pattern indicates that search activity increased as the tournament approached, which may reflect growing attention to tournament-related information.

4.1.2 Descriptive Statistics Analysis

Descriptive statistical analysis was conducted to examine the characteristics of the Google Trends variables used in this study.

Table 3. Descriptive Statistics of Google Trends Variables

Statistic	FIFA	FIFA_WC2026	Schedule	Tickets
Mean	4.632	9.057	1.720	2.433
Median	2	3	0	0
Maximum	100	100	100	100
Minimum	0	0	0	0
Std. Dev.	10.957	16.822	9.723	12.482
Skewness	6.264	2.981	8.549	5.720
Kurtosis	47.402	12.671	78.226	36.997
Jarque-Bera	23147.585	1403.550	64719.779	13992.096
Probability	0.000	0.000	0.000	0.000
Observations	261	261	261	261

Source: Processed from Google Trends data (2021–2026) using EVIEWS 13.

Table 3 presents the descriptive statistics of the Google Trends variables. The FIFA_WC2026 variable recorded the highest mean search interest (9.057), followed by FIFA (4.632), Tickets (2.433), and Schedule (1.720). The variables also showed substantial positive skewness and high kurtosis, indicating that search activity was concentrated at relatively low levels for much of the observation period but experienced occasional sharp

increases. The Jarque–Bera test rejected the null hypothesis of normality for all variables ($p < 0.001$), indicating that the search-interest series were not normally distributed.

4.1.3 Correlation Analysis

Correlation analysis was performed to examine the linear relationships among the Google Trends variables.

Table 4. Correlation Matrix

Variable	FIFA	FIFA_WC2026	Schedule	Tickets
FIFA	1.000	0.192	0.894	0.339
FIFA_WC2026	0.192	1.000	0.041	0.061
Schedule	0.894	0.041	1.000	0.304
Tickets	0.339	0.061	0.304	1.000

Source: Processed from Google Trends data (2021–2026) using EViews 13.

Table 4 shows the correlation coefficients among the Google Trends variables. The strongest positive correlation was observed between FIFA and Schedule ($r = 0.894$), indicating a strong linear relationship between their weekly search-interest patterns. In contrast, FIFA_WC2026 showed weak correlations with FIFA ($r = 0.192$), Schedule ($r = 0.041$), and Tickets ($r = 0.061$). These results indicate that the weekly search-interest pattern for FIFA World Cup 2026 differed considerably from those of the supporting keywords during the observation period.

4.1.4 Stationarity Test

Before estimating the forecasting model, the stationarity of the FIFA_WC2026 series was examined using the Augmented Dickey-Fuller (ADF) test.

Table 5. Augmented Dickey-Fuller (ADF) Test Results

Test Statistic	Value
ADF Statistic	-8.1497
Probability	0.0000
Critical Value (1%)	-3.4554
Critical Value (5%)	-2.8725
Critical Value (10%)	-2.5727

Decision: Stationary at Level $[I(0)]$

Source: Processed from Google Trends data (2021–2026) using EViews 13.

The ADF test produced a statistic of -8.1497 with a probability value below 0.001. Because the test statistic is lower than the critical values at the 1%, 5%, and 10% significance levels, the null hypothesis of a unit root is rejected. Therefore, the FIFA_WC2026 series is stationary at level $[I(0)]$, indicating that differencing is not required and that the differencing order for the ARIMA model can be set to $d=0$.

4.1.5 ARIMA Model Selection

The ACF and PACF analyses were used to identify candidate ARIMA specifications for the FIFA_WC2026 series. Several candidate models were subsequently estimated and compared using the Akaike Information Criterion (AIC), Schwarz Criterion (SC), log-likelihood, and parameter significance.

Table 6. Comparison of Candidate ARIMA Models

Model	Log Likelihood	AIC	Schwarz Criterion (SC)	Parameter Significance	Rank
ARIMA(1,0,0)	-1068.449	8.2103	8.2513	Significant	4
ARIMA(2,0,0)	-1067.209	8.2085	8.2631	AR(2) Not Significant	3
ARIMA(1,0,1)	-1066.702	8.2046	8.2592	Significant	2
ARIMA(2,0,1)	-1066.572	8.2113	8.2796	Not Significant	5
ARIMA(1,0,2)	-1058.309	8.1480	8.2162	Significant	1

Source: Processed from Google Trends data (2021–2026) using EViews 13.

Table 6 shows the comparison of the candidate ARIMA models. ARIMA(1,0,2) produced the lowest AIC (8.1480) and Schwarz Criterion (8.2162) among the candidate specifications and also had the highest log-likelihood value (-1058.309). Based on these model-selection criteria, ARIMA(1,0,2) was selected as the preferred specification for forecasting the FIFA World Cup 2026 search-interest series. The reported parameter-significance results also support the specification, although the coefficient estimates and associated test statistics should be provided if detailed parameter verification is required.

4.1.6 Forecasting Results

After ARIMA(1,0,2) was selected as the preferred model, the model was used to generate forecasts of FIFA World Cup 2026 search interest based on the weekly Google Trends series.

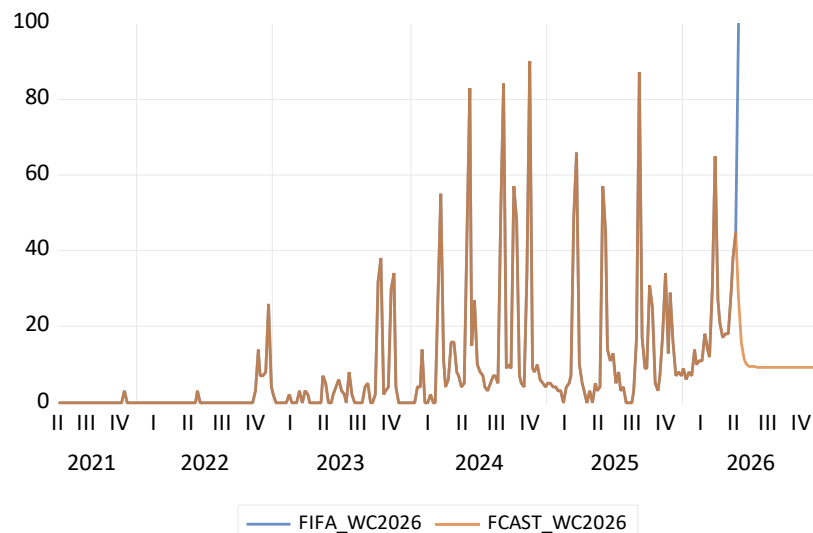


Figure 3. Actual and Forecast Values of FIFA World Cup 2026 Search Interest Using the ARIMA(1,0,2) Model
Source: Processed from Google Trends data (2021–2026) using EViews 13.

Figure 3 compares the observed search-interest values with the forecast values generated by the ARIMA(1,0,2) model. The forecast series follows the general movement of the observed series, although some sharp fluctuations are not fully captured. The results indicate that the model captures part of the temporal pattern in FIFA World Cup 2026 search activity, while the remaining differences suggest that sudden changes in search interest are difficult to represent fully using the selected ARIMA specification. To further evaluate forecast performance, RMSE, MAE, Theil Inequality Coefficient, and sMAPE were calculated. The results are presented in Table 7.

Table 7. Forecast Accuracy Evaluation of the ARIMA(1,0,2) Model

Accuracy Metric	Value
RMSE	16.482
MAE	10.525
Theil Inequality Coefficient	0.571
Symmetric MAPE (sMAPE, %)	128.260

Source: Processed from Google Trends data (2021–2026) using EViews 13.

Table 7 presents the forecast-error measures for the ARIMA(1,0,2) model. The model produced an RMSE of 16.482 and an MAE of 10.525, while the Theil Inequality Coefficient was 0.571. The sMAPE was 128.260%. Because the Google Trends series contains numerous zero observations, the conventional MAPE was not used. However, the high sMAPE value indicates that the percentage-based forecast error was substantial and should be interpreted cautiously, particularly given the distribution of the Google Trends series and the presence of low or zero observations.

4.2 Discussion

The findings show that Google Trends search activity can be used to examine changes in online attention related to the FIFA World Cup 2026. Search activity was relatively low during 2021 and 2022 but became more variable from 2023 onward, with several notable increases during 2024–2026. The higher search activity observed closer to the tournament period suggests that interest in tournament-related information increased as the event approached. This pattern is broadly consistent with previous research showing that online search behavior can provide an indicator of changes in public attention toward specific events and topics (Jun et al., 2018; Mavragani & Ochoa, 2019). The descriptive statistics further indicate that the Google Trends variables were characterized by substantial positive skewness and high kurtosis. This pattern reflects the concentration of search activity at relatively low levels during many weeks and the occurrence of occasional sharp increases. The non-normality identified by the Jarque–Bera tests is consistent with the highly uneven distribution of search-interest values. Such patterns are common in search data because online activity can change rapidly

in response to news, announcements, or other event-related developments (Nuti et al., 2014). However, the present analysis does not directly identify the specific events responsible for individual search spikes.

The correlation analysis provides additional information about the relationships among the search-interest variables. The strongest relationship was found between FIFA and Schedule ($r = 0.894$), whereas FIFA_WC2026 showed weak correlations with FIFA ($r = 0.192$), Schedule ($r = 0.041$), and Tickets ($r = 0.061$). The weak correlations suggest that the weekly search pattern for FIFA World Cup 2026 did not closely follow the search patterns of the supporting keywords. Therefore, these keywords appear to represent different search patterns during the observation period rather than a single closely synchronized series. The ADF test indicated that the FIFA_WC2026 series was stationary at level, with an ADF statistic of -8.1497 and a probability value below 0.001 . This result supports the use of $d=0$ in the ARIMA specification. Among the candidate models, ARIMA(1,0,2) produced the lowest AIC and SC values and the highest log-likelihood value. Based on these criteria, ARIMA(1,0,2) was selected as the preferred model among the specifications examined.

The forecasting results indicate that the selected model captures the general movement of the search-interest series but does not fully reproduce all short-term fluctuations. The RMSE of 16.482 and MAE of 10.525 indicate the magnitude of the forecast errors on the SVI scale, while the Theil Inequality Coefficient was 0.571 . The sMAPE value of 128.260% indicates substantial percentage-based forecast error and therefore suggests that the forecasting results should be interpreted with caution. In particular, the presence of many zero or low SVI observations can affect percentage-based accuracy measures.

The results indicate that Google Trends data can provide a useful source for examining search-interest patterns surrounding the FIFA World Cup 2026 in Indonesia. The ARIMA(1,0,2) model provides a statistical representation of the observed time-series pattern and generates forecasts of future search activity. However, the forecasting results should be interpreted as predictions of Google search interest, rather than direct measurements of public attention, awareness, or actual audience behavior. Future research could consider additional variables or forecasting approaches to better account for abrupt changes in search activity associated with event-specific developments.

5. Conclusion and Recommendations

This study examined search interest related to the FIFA World Cup 2026 in Indonesia using weekly Google Trends data from June 2021 to May 2026. The results show substantial fluctuations in search activity throughout the observation period, with higher levels and more frequent spikes observed as the tournament approached. Descriptive statistical analysis showed that the search-interest series was highly skewed and non-normally distributed, indicating substantial variation in search activity across weeks. The Augmented Dickey-Fuller test confirmed that the FIFA_WC2026 series was stationary at level, allowing the use of an ARIMA model with a differencing order of zero. Several candidate ARIMA models were estimated and compared using the Akaike Information Criterion (AIC), Schwarz Criterion (SC), and Log-Likelihood values. Among the evaluated specifications, ARIMA(1,0,2) was selected as the preferred model because it produced the lowest AIC (8.1480) and SC (8.2162) values and the highest Log-Likelihood value (-1058.309). The model therefore provided the best statistical fit among the candidate specifications examined in this study. The forecasting results produced an RMSE of 16.482 , an MAE of 10.525 , a Theil Inequality Coefficient of 0.571 , and an sMAPE of 128.260% . The forecasting results indicate that ARIMA(1,0,2) was able to capture part of the general movement of search interest, although its ability to predict sharp fluctuations was limited. The relatively high sMAPE also indicates that the forecasting error was substantial when expressed as a percentage. Therefore, the model should be interpreted as a useful representation of the general pattern of Google search interest rather than as a highly accurate predictor of individual weekly search values.

The findings indicate that Google Trends can be used as a source of data for monitoring search-interest patterns surrounding major international sporting events. However, Google Trends SVI represents relative search activity and should not be interpreted as a direct measure of the entire population's public interest or actual audience behavior. Future studies could examine whether incorporating external variables, such as match schedules, ticket sales, media coverage, and social media activity, improves forecasting accuracy. Other forecasting approaches, including machine learning and hybrid time-series models, could also be compared with ARIMA to determine whether they better capture sudden changes and irregular spikes in search activity.

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References

- Abdollahi, A., Ramezaninezhad, R., & Naderi Nasab, M. (2024). The impact of sporting events on sports tourism. *Journal of Study and Innovation in Education and Development*, 4(3), 136–152. <https://doi.org/10.61838/jsied.4.3.8>
- Adelowo, A. B. (2022). Making FIFA World Cup Qatar 2022 truly healthy and safe: Strategies and legacy for present and future sporting events. *TEXILA International Journal of Academic Research*, 1–12. <https://doi.org/10.21522/TIJAR.2014.SE.22.02.Art001>
- Albahli, S. (2025). LSTM vs. Prophet: Achieving superior accuracy in dynamic electricity demand forecasting. *Energies*, 18(2), 278. <https://doi.org/10.3390/en18020278>
- Álvarez-García, O., Sureda-Negre, J., Comas-Forgas, R., & Oliver-Trobat, M. F. (2023). The Spanish population's interest in climate change based on Internet searches. *Humanities and Social Sciences Communications*, 10(1), 231. <https://doi.org/10.1057/s41599-023-01736-5>
- Avelar, M., Sousa, Á., & Menezes, A. (2021). The impacts of sport tourism events: The Red Bull Cliff Diving World Series case in the Azores Islands. In *Advances in tourism, technology and systems* (pp. 64–80). Springer. https://doi.org/10.1007/978-981-33-4256-9_6
- Cao, T. (2023). Sports brands and tourism: Unexpected perspectives of mutual development. *Modern Economy and Management*, 2, 9. <https://doi.org/10.53964/mem.2023009>
- Chen, Z. (2025). Empowering sports in the digital economy: Change, opportunity and the future. *Highlights in Business, Economics and Management*, 59, 34–39. <https://doi.org/10.54097/ddqns75>
- Cheng, Y., & Wu, Y. (2025). The formation mechanism of “sports fandom circle” in the digital media era: An analysis from the perspective of fan emotional dynamic development. *PLOS ONE*, 20(9), e0330900. <https://doi.org/10.1371/journal.pone.0330900>
- Constantinescu, M., & Ungureanu, L. (2024). Economic effects of sports events in tourism: Case study EURO 2024. *Journal of Environmental Management and Tourism*, 15(4), 664–672. [https://doi.org/10.14505/jemt.v15.4\(76\).08](https://doi.org/10.14505/jemt.v15.4(76).08)
- Dinis, G., Breda, Z., Costa, C., & Pacheco, O. (2019). Google Trends in tourism and hospitality research: A systematic literature review. *Journal of Hospitality and Tourism Technology*, 10(4), 747–763. <https://doi.org/10.1108/JHTT-08-2018-0086>
- Erokhin, D., & Komendantova, N. (2024). Analyzing public interest in geohazards using Google Trends data. *Geosciences*, 14(10), 266. <https://doi.org/10.3390/geosciences14100266>
- Gholipour, H. F., Arjomandi, A., Marsiglio, S., & Foroughi, B. (2020). Is outstanding performance in sport events a driver of tourism? *Journal of Destination Marketing & Management*, 18, 100507. <https://doi.org/10.1016/j.jdmm.2020.100507>
- Gong, X., Hou, M., Han, Y., Liang, H., & Guo, R. (2022). Application of the Internet platform in monitoring Chinese public attention to the outbreak of COVID-19. *Frontiers in Public Health*, 9, 755530. <https://doi.org/10.3389/fpubh.2021.755530>
- Höpken, W., Eberle, T., Fuchs, M., & Lexhagen, M. (2019). Google Trends data for analysing tourists' online search behaviour and improving demand forecasting: The case of Åre, Sweden. *Information Technology & Tourism*, 21(1), 45–62. <https://doi.org/10.1007/s40558-018-0129-4>

- Horky, T., Clavio, G., & Grimmer, C. (2020). Broadcasting the World Cup: A multinational comparative analysis of broadcast quality in the 2014 World Cup. *Soccer & Society*, 21(1), 15–28. <https://doi.org/10.1080/14660970.2018.1448794>
- Jun, S.-P., Yoo, H. S., & Choi, S. (2018). Ten years of research change using Google Trends: From the perspective of big data utilizations and applications. *Technological Forecasting and Social Change*, 130, 69–87. <https://doi.org/10.1016/j.techfore.2017.11.009>
- Kim, Y., & Kim, S. (2026). Exploring consumer cognitive and behavioral engagement on a sport team's Twitter pages. *Communication & Sport*, 14(1), 59–90. <https://doi.org/10.1177/21674795251330303>
- Lee Ludvigsen, J. A., & Petersen-Wagner, R. (2023). From television to YouTube: Digitalised sport mega-events in the platform society. *Leisure Studies*, 42(4), 615–632. <https://doi.org/10.1080/02614367.2022.2125557>
- Lee, Y., & Na, S. (2024). Fear of missing out: An antecedent of online fan engagement of sport teams' social media. *Communication & Sport*, 12(5), 908–937. <https://doi.org/10.1177/21674795231174565>
- Lenart, K. (2024). Applications of Google Trends as a data source for statistical models. *Acta Universitatis Lodzianis. Folia Oeconomica*, 3(368), 69–81. <https://doi.org/10.18778/0208-6018.368.04>
- Liang, T., & Li, S. (2025). Utilizing time series analysis to forecast the growth of mobile payment users and its implications for the digital economy. *PLOS ONE*, 20(8), e0327811. <https://doi.org/10.1371/journal.pone.0327811>
- Mangono, T., Smittenaar, P., Caplan, Y., Huang, V. S., Sutermaster, S., Kemp, H., & Sgaier, S. K. (2021). Information-seeking patterns during the COVID-19 pandemic across the United States: Longitudinal analysis of Google Trends data. *Journal of Medical Internet Research*, 23(5), e22933. <https://doi.org/10.2196/22933>
- Mavragani, A. (2020). Tracking COVID-19 in Europe: Infodemiology approach. *JMIR Public Health and Surveillance*, 6(2), e18941. <https://doi.org/10.2196/18941>
- Mavragani, A., & Ochoa, G. (2019). Google Trends in infodemiology and infoveillance: Methodology framework. *JMIR Public Health and Surveillance*, 5(2), e13439. <https://doi.org/10.2196/13439>
- Moon, J. W., & Barlev, M. (2024). *Google search data for social scientists: A tutorial and best practices* [Preprint]. OSF Preprints. <https://doi.org/10.31234/osf.io/af7b2>
- Nuti, S. V., Wayda, B., Ranasinghe, I., Wang, S., Dreyer, R. P., Chen, S. I., & Murugiah, K. (2014). The use of Google Trends in health care research: A systematic review. *PLOS ONE*, 9(10), e109583. <https://doi.org/10.1371/journal.pone.0109583>
- Papanikos, G. T. (2023). The global media coverage of the 2022 Qatar World Football Cup. *Athens Journal of Sports*, 10(2), 119–132. <https://doi.org/10.30958/ajhspo.10-2-4>
- Pigman, G. A. (2014). International sport and diplomacy's public dimension: Governments, sporting federations and the global audience. *Diplomacy & Statecraft*, 25(1), 94–114. <https://doi.org/10.1080/09592296.2014.873613>
- Stimpson, J. P., Tamirisa, K., Kaholokula, J. K., & Ortega, A. N. (2026). Monitoring public health during the 2023 Maui wildfire using Google search trends. *Hawai'i Journal of Health & Social Welfare*, 85(1), 10–16. <https://doi.org/10.62547/QCKY9141>
- Ting, C.-J., & Chen, Y.-J. (2025). Recreational activities and tourism expenditure in Taiwan: An online buzz perspective. *Journal of Applied Finance & Banking*, 1–12. <https://doi.org/10.47260/jafb/1561>
- Zayed, B. A., Talaia, A. M., Gaaboobah, M. A., Amer, S. M., & Mansour, F. R. (2023). Google Trends as a predictive tool in the era of COVID-19: A scoping review. *Postgraduate Medical Journal*, 99(1175), 962–975. <https://doi.org/10.1093/postmj/qgad012>