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The Influence of Data Analytics on User Engagement with Sports Platforms Among Young Adults in Andhra Pradesh

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ABSTRACT

This study examines the relationship between data-analytics features and user engagement with digital sports platforms among young adults in Andhra Pradesh. The research considers personalized content, real-time statistics, performance analytics, predictive insights and data-driven recommendations. A quantitative, descriptive, cross-sectional approach was adopted, using a five-point Likert-scale Google Forms questionnaire and convenience sampling. The supplied workbook contained 85 rows; its provenance sheet classified 55 as synthetic. Consequently, the empirical analysis uses 30 records identified as original responses. Descriptive statistics, Cronbach's alpha, Pearson correlation and multiple regression were employed. Overall analytics showed a significant positive correlation with perceived engagement ($r = 0.696$, $p < .001$). The five-predictor regression was significant ($R^2 = 0.603$, $p < .001$), although no individual feature achieved a significant adjusted coefficient at the 5% level. Performance analytics showed the strongest bivariate relationship with engagement ($r = 0.748$). The study offers preliminary practical implications while acknowledging limitations of sample size, self-reports and observational design.

Keywords: data analytics; sports platforms; user engagement; personalized content; performance analytics; young adults; Andhra Pradesh.

1. INTRODUCTION

1.1 Background

Digital sports platforms have changed how fans access match broadcasts, live scores, highlights, player information, statistics and team updates. Mobile applications, websites, social media and streaming services now allow users to follow sports in real time. Alongside content delivery, platforms employ data analytics to identify preferences, organize information and present customized experiences.

Analytics can be visible to users through personalized feeds, up-to-date match statistics, player and team performance comparisons, predictive insights, notifications and relevant content recommendations. User engagement includes the frequency of platform visits, time spent, interaction or discussion of content and willingness to continue using the service. The present study considers how these user-facing features are associated with young adults' reported engagement in Andhra Pradesh.

1.2 Problem Statement

Although sports platforms increasingly provide data-driven features, their availability does not necessarily imply higher engagement. Young adults may vary in their familiarity with analytics, sporting interests, trust and perceived usefulness. Empirical evidence about the combined relationships of several analytics dimensions with platform engagement is limited in the Andhra Pradesh context.

1.3 Significance of the Study

The study can inform sports-platform developers, content managers and digital marketers about which analytical experiences may relate to more active use. It adds regional evidence to research on the connection between information technology and sports-fan engagement, while recognizing that the design measures statistical associations, not causal effects.

1.4 Scope of the Study

The investigation concerns young adults aged 18–30 in Andhra Pradesh who use digital sports platforms. Independent measures are personalized content, real-time statistics, performance analytics, predictive insights and recommendations; engagement is represented through self-reported interaction, platform use and intended continued use. The results pertain to the analyzed convenience sample.

2. REVIEW OF LITERATURE AND RESEARCH GAP

2.1 Review of Previous Studies

Vale and Fernandes (2018) linked football-club Facebook engagement to information, empowerment, brand love and social motivations. Their framework explains consumption, contribution and creation, but not the role of user-facing analytics.

Agrawal, Gupta and Yousaf (2018) found that forms and orientations of Indian cricket-team Facebook posts were associated with different levels of likes, comments and shares; the study focused on post characteristics rather than analytical tools.

Aloufi et al. (2018) applied big-data sentiment analysis to UEFA Champions League conversations, observing spikes in activity around goals. Their emphasis was sentiment detection, not platform users' response to analytical features.

Chauhan, Sharma and Tripathi (2020) examined opinion mining as an input for prediction of Indian Premier League results. Their dependent outcome was match prediction rather than sports-platform engagement.

Pandey and Hassan (2021), studying 236 IPL fans, associated perceived knowledge and cognitive awareness with social-media e-engagement, with sports fandom playing a mediating role. Analytics feature usage was not directly assessed.

Annamalai et al. (2021) analyzed IPL clubs' content strategy and reported that content type, vividness and seasonal or performance factors related to likes, comments and shares. Their platform emphasis was Facebook rather than multiple digital sports services.

Mehra et al. (2022) studied Euro 2020 online discussions and showed that tweet-context analysis provides brand insights beyond hashtags or mentions; the work did not directly test engagement outcomes from recommendations or live statistics.

2.2 Research Gap

Collectively, the literature addresses fan motivations, content formats, sentiment mining, prediction and knowledge-related engagement, yet offers limited evidence on the relationship of five user-facing analytics dimensions with sports-platform engagement among young adults in Andhra Pradesh. The present study examines these dimensions together within one empirical framework.

2.3 Conceptual Framework

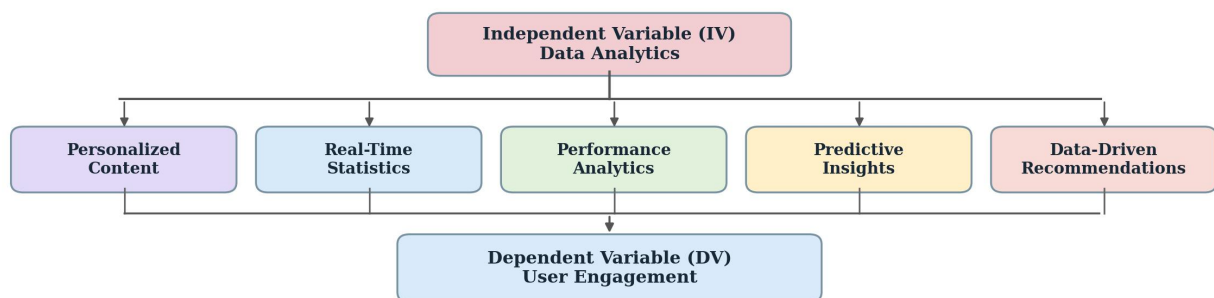


Figure 2.1 Conceptual Framework: Five Analytics Dimensions and User Engagement

3. OBJECTIVES AND HYPOTHESES

3.1 Objectives of the Study

The study aims to identify sports-platform usage patterns and familiarity with analytical information; examine the association between overall data analytics and engagement; assess personalized content in relation to engagement frequency and intensity; evaluate real-time statistics and performance analytics in relation to platform interaction; examine predictive insights and recommendations in relation to continued use; and identify the dimensions most strongly related to engagement.

3.2 Hypotheses of the Study

Five null hypotheses were retained from the original project: H01—overall data analytics has no significant association with user engagement; H02—personalized content has no significant association with engagement; H03—real-time statistics have no significant association with engagement; H04—performance analytics have no significant association with engagement; and H05—predictive insights combined with recommendations have no significant association with continued use. Each corresponding alternative (H11–H15) states that a statistically significant association exists. Tests used $\alpha = 0.05$.

4. RESEARCH METHODOLOGY

4.1 Research Design and Sampling

A descriptive, quantitative, cross-sectional survey design was used. The study population was young adult users of digital sports platforms in Andhra Pradesh. Convenience sampling was planned, with a target of approximately 200 respondents; the sample available for verified statistical analysis comprised 30 records identified as original in the supplied response workbook. The workbook contains 85 data rows, but the DATA PROVENANCE worksheet explicitly classifies 55 as synthetic; those rows were excluded rather than treated as field responses.

4.2 Research Instrument and Variables

Data were gathered using a Google Forms instrument comprising 30 questions: 10 on demographics and sports-platform usage, and 20 five-point agreement statements (1 = Strongly Disagree; 5 = Strongly Agree). The independent constructs were Personalized Content (Q11–Q15), Real-Time Statistics (Q16–Q19), Performance Analytics (Q20–Q23), Predictive Insights (Q24–Q25) and Data-Driven Recommendations (Q26). Perceived User Engagement was represented by Q27–Q30; continued usage intention was measured through Q30. The overall analytics composite used Q11–Q26.

4.3 Data Collection and Ethics

The online survey captured voluntary self-reports for academic analysis. Only aggregate counts and scale statistics appear in this article, and no respondents are identified. Responses were checked for completeness and source provenance before analysis; the 30 original-designated records had no missing questionnaire values.

4.4 Data Analysis Procedure

Analyses included frequency and percentage distributions, construct means and standard deviations, internal consistency using Cronbach's alpha for multi-item scales, Pearson correlations and ordinary least squares multiple regression. Composite scores were calculated as the average of the relevant questionnaire items. Model fit was evaluated using R^2 , adjusted R^2 and an F-test; predictors were assessed with unstandardized coefficients, two-sided p-values and variance inflation factors (VIF). Hypothesis comparisons used the 5% level without multiple-comparison correction. The observational survey cannot demonstrate causation.

5. DATA ANALYSIS AND INTERPRETATION

All descriptive and inferential results below refer only to the 30 original-designated survey records; the 55 rows identified as synthetic were not analyzed.

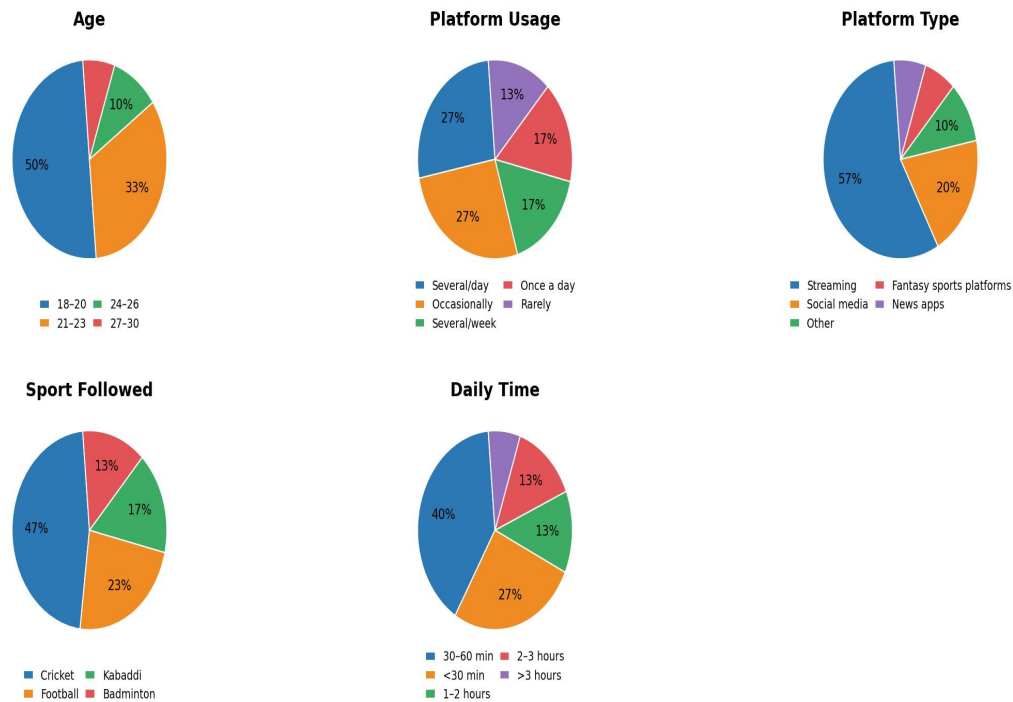
5.1 Respondent Profile and Sports-Platform Usage

Table 5.1 Respondent Profile and Sports-Platform Usage (N = 30)

Variable	Response	Frequency	Percentage (%)
Age	18–20	15	50.0
	21–23	10	33.3
	24–26	3	10.0
	27–30	2	6.7
Gender	Male	16	53.3

Variable	Response	Frequency	Percentage (%)
	Female	14	46.7
Education	Undergraduate	21	70.0
	Intermediate	7	23.3
	Postgraduate	2	6.7
Platform use	Several times a day	8	26.7
	Once a day	5	16.7
	Several times a week	5	16.7
	Occasionally	8	26.7
	Rarely	4	13.3
Platform type	Sports streaming	17	56.7
	Social media	6	20.0
	Other	3	10.0
	Fantasy sports	2	6.7
	Sports news apps/websites	2	6.7
Sport followed	Cricket	14	46.7
	Football	7	23.3
	Kabaddi	5	16.7
	Badminton	4	13.3
Daily time	Less than 30 minutes	8	26.7
	30 minutes–1 hour	12	40.0
	1–2 hours	4	13.3
	2–3 hours	4	13.3
	More than 3 hours	2	6.7

Half of the respondents were aged 18–20 years, 53.3% were male and 70.0% were undergraduates. Students constituted 73.3% of the sample; 53.3% lived in urban areas. Sports streaming was the leading platform category (56.7%), cricket the most-followed sport (46.7%), and 40.0% spent 30–60 minutes per day on sports platforms.



Figures 5.1–5.5 Distribution of Age, Platform Usage, Platform Type, Sport Followed and Daily Time

5.2 Descriptive Statistics

Table 5.2 Descriptive Statistics of Study Variables (N = 30)

Variable	Items	Mean	Std. Deviation
Personalized content	5	3.627	0.970
Real-time statistics	4	3.592	1.043
Performance analytics	4	3.633	1.131
Predictive insights	2	3.667	1.248
Data-driven recommendations	1	3.433	1.382
Overall data analytics	16	3.612	0.942
User engagement	4	3.758	1.031

All construct means were above the neutral midpoint of 3. Among individual dimensions, Predictive Insights recorded the highest mean (3.667), followed by Performance Analytics (3.633) and Personalized Content (3.627). Recommendations had the lowest mean (3.433). Perceived Engagement averaged 3.758 (SD = 1.031).

5.3 Reliability Analysis

Table 5.3 Reliability Analysis (Cronbach's Alpha)

Scale	Items	Cronbach's Alpha
Personalized content	5	0.883
Real-time statistics	4	0.912

Scale	Items	Cronbach's Alpha
Performance analytics	4	0.920
Predictive insights	2	0.923
Data-driven recommendations	1	Not applicable (1 item)
Overall data analytics	16	0.954
User engagement	4	0.890

Internal consistency was high for the multi-item measures: four analytics dimensions yielded $\alpha = 0.883\text{--}0.923$, overall analytics yielded $\alpha = 0.954$, and user engagement yielded $\alpha = 0.890$. Alpha cannot be estimated for the single-item recommendation indicator; the two-item prediction scale and small sample warrant caution.

5.4 Correlation Analysis

Table 5.4 Pearson Correlations with Engagement or Continued Use

Analytics Dimension	Outcome	Pearson r	p-value
Personalized content	User engagement	0.571	0.001
Real-time statistics	User engagement	0.456	0.011
Performance analytics	User engagement	0.748	< .001
Predictive insights	Continued use	0.482	0.007
Recommendations	Continued use	0.690	< .001
Prediction + recommendations	Continued use	0.593	0.001
Overall data analytics	User engagement	0.696	< .001

Overall analytics and user engagement had a significant positive association ($r = 0.696$, $p < .001$). Performance Analytics showed the strongest engagement-related bivariate correlation ($r = 0.748$), followed by Personalized Content ($r = 0.571$) and Real-Time Statistics ($r = 0.456$). Combined Prediction and Recommendations were associated with intention to continue using the platform ($r = 0.593$). These are associations, not causal effects.

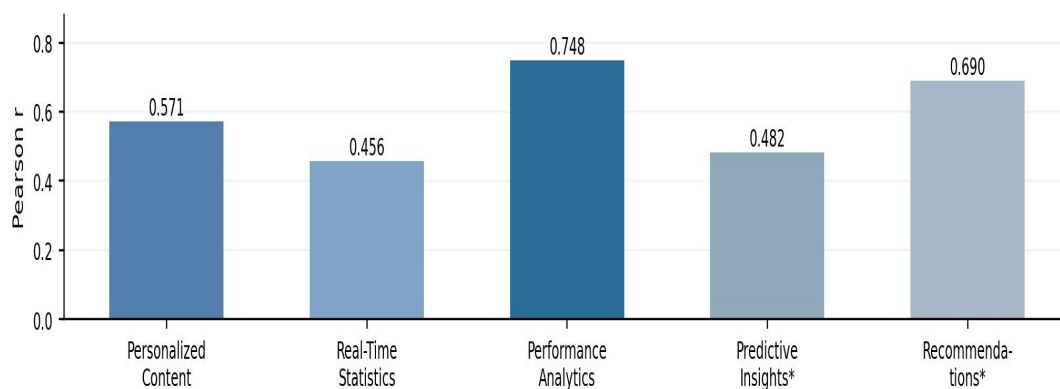


*Figure 5.6 Correlations of Analytics Dimensions with Engagement or Continued Use (*continued use)*

5.5 Multiple Regression Analysis

Table 5.5 Multiple Regression Model Summary

Statistic	Value
N	30
R-squared	0.603
Adjusted R-squared	0.520
F-statistic	F(5, 24) = 7.293
Overall model p-value	< .001

Table 5.6 Multiple Regression Coefficients (Outcome: User Engagement)

Predictor	B (unstandardized)	p-value	VIF	5% result
Personalized content	+0.099	0.645	2.42	Not significant
Real-time statistics	-0.073	0.714	2.39	Not significant
Performance analytics	+0.438	0.052	3.33	Not significant
Predictive insights	-0.009	0.963	3.33	Not significant
Data-driven recommendations	+0.241	0.171	3.17	Not significant

The overall five-predictor model was significant and accounted for 60.3% of observed variation in the engagement index (adjusted $R^2 = 0.520$). However, no individual predictor reached $p < .05$ after adjustment for the remaining features; Performance Analytics came closest ($B = 0.438$, $p = .052$). VIFs ranged from 2.39 to 3.33, indicating overlap among predictors. A separate simple regression on Overall Analytics explained 48.4% of engagement variance ($B = 0.762$, $p < .001$). Coefficients should not be interpreted as causal effects.

5.6 Hypothesis Testing

Table 5.7 Hypothesis Test Results at the 5% Significance Level

Null	Association tested	Observed result	Decision
H01	Analytics and engagement	$r = 0.696$; $p < .001$	Reject H01
H02	Personalization and engagement	$r = 0.571$; $p = .001$	Reject H02
H03	Real-time statistics and engagement	$r = 0.456$; $p = .011$	Reject H03
H04	Performance analytics and engagement	$r = 0.748$; $p < .001$	Reject H04
H05	Prediction/recommendations and continued use	$r = 0.593$; $p = .001$	Reject H05

All five null hypotheses were rejected using their prespecified bivariate correlation comparisons, supporting their alternatives as statements of association. None of the five dimension-level predictors was independently significant in the joint regression; the bivariate decisions should not be mistaken for evidence of unique effects. Reported p-values are unadjusted for multiple testing.

5.7 Major Findings

The 30-responder sample comprised mainly students, and sports streaming and cricket were prominent. Analytics perceptions and engagement means exceeded 3 on a five-point scale. Overall analytics was positively associated with engagement ($r = 0.696$). Performance Analytics was the strongest

simple correlate of engagement ($r = 0.748$), while predictive insights and recommendations were associated with continued use. The joint five-feature regression was significant but provided no statistically significant independent dimension coefficients at the 5% level.

6. SUGGESTIONS AND CONCLUSION

6.1 Suggestions

Performance analytics ($r = 0.748$): prioritize clear player and team comparisons, informative match summaries and explainable statistics; confirm their value with larger follow-up studies.

Personalized content ($r = 0.571$): allow users to select sports, players, teams and alerts, and provide relevant content without excessive repetition.

Real-time statistics ($r = 0.456$): use accessible mobile-friendly live scores and concise visual explanations to make updates easy to understand.

Predictive insights and recommendations ($r = 0.593$ with continued use): communicate uncertainty in predictions, avoid treating forecasts as guarantees and make recommendations relevant to user interests.

Measurement and testing: compare features in controlled experiments or larger datasets before asserting that one dimension increases engagement; the adjusted regression did not isolate a significant unique predictor.

6.2 Limitations and Future Scope

Only 30 responses were identified as original in the source workbook, substantially below the targeted sample of approximately 200; the other 55 rows were classified as synthetic and excluded. Convenience sampling, self-reported responses and a single cross-sectional observation limit generalizability and causal inference. The engagement index reflects agreement rather than actual platform log data, while recommendations were measured by one item and predictive insights by two. High scale overlap and a five-predictor regression with $n = 30$ also constrain the precision of conclusions. Future research should obtain a larger, independently verified sample across Andhra Pradesh districts, employ distinct validated multi-item constructs, compare platform categories and incorporate behavioural data or controlled experiments.

6.3 Conclusion

The study identifies a statistically significant positive relationship between user-facing data analytics and perceived engagement with sports platforms among 30 surveyed young adults in Andhra Pradesh ($r = 0.696$, $p < .001$). Performance Analytics showed the strongest bivariate relationship, and predictive insights together with recommendations correlated with intention to continue use. Although the combined regression model was significant ($R^2 = 0.603$), no individual dimension was a statistically significant unique predictor after accounting for the others. The findings provide exploratory direction for platform design and digital sports content management, but do not establish causality or support broad population-level conclusions.

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