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PREDICTORS INFLUENCING LOCAL SPECTATOR ATTENDANCE IN INDIAN PREMIER LEAGUE (IPL)

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ABSTRACT:

Sports business to thrive and proper in long run, it is important to understand the factors that motivate fans to attend games in the stadium. While broadcasting of games has increased, stadium attendance still determines the level of attachment the fans have towards the team or the game. 106 supporters of age ranging from 18 to 60 years old were surveyed at M.A. Chidambaram stadium after three different games IPL games held at Chennai. Three surveys used a five-point Likert scale to gauge team loyalty (The Tsiotsou scale, 2013), The Stadium Attendance and Non-Attendance Reason Scale (SANARS) and spectator satisfaction (Oliver, 1980). The factors were analysed based on their impact on motivating fans to attend more games at the stadium. The paper also measured fans' loyalty and satisfaction towards the team. Attendance at stadium was observed to be significantly being determined by few factors which have been analysed. Stadium attendance has the strongest correlation with Fans' satisfaction ($r = 0.744$) and Team effect($r=0.656$). Stadium attendance has a moderate correlation with loyalty($r=0.377$). The finding can be useful for franchise owners who are looking for ways to increase revenue through stadium engagement during the games, especially in IPL, which has seen exponential growth over the last few years.

Keywords: Stadium attendance, IPL, team loyalty, satisfaction, spectator

Introduction:

IPL franchises earn around ₹ 3 to 5 crores as match day revenue per IPL game. The revenue has been increasing due to higher ticket prices and cost of other services provided within the stadium. Many marketing studies have looked into ways to get more people into stadiums to watch professional sports (Katz et al., 2018; Oh et al., 2017a) in an effort to raise demand from customers (Madrigal, 1995; Schreyer & Ansari, 2022). A a higher number of stadium attendances caters to the direct needs of a sporting club's many external stakeholders,

including broadcasters, corporate sponsors, and also those customers in the hospitality section, all of whom benefit from an enhanced stadium atmosphere (e.g., McDonald, 2010). Similarly, an underutilized stadium is likely to reduce future visiting intentions among potential spectators, watching a match from their home (e.g., Oh et al., 2017). Hence the stadium attendance has implications not only on the matchday revenue, but also on determining the long term engagement.

Rottenberg (1956), in his pioneering article on the baseball players' labor market, was first to offer a detailed demand specification (cf., Fort, 2005), including already factors as diverse as the ticket price, potential substitutes, and, perhaps most controversially, competitive balance and the resulting match outcome uncertainty.

IPL in India is becoming an important source of entertainment, thus providing huge avenues of generating income. The demand for tickets, especially in Chennai has skyrocketed showing the level of engagement that the fans desire. Majority of the studies to predict spectator attendance have been focussed on football league across the world. A high proportion of these studies have been in European leagues. Other major studies have targeted American markets in basketball and baseball. This study tries to fill understand the market for the IPL, which has grown bigger than the various football and basketball leagues that have been analysed by the previous studies.

Literature Review:

Fans are defined as those who go to games in person and watch the action unfold up close (Biscaia et al., 2012; Mustaffa, M., Sadek, M., Nazarudin, M. N., Yusof, B., Wahab, S. A., & Abdul Razak, 2018). They are there to cheer on their favourite teams in the league, and they want to feel the energy and thrill of a live game. People who have a deep connection to a sport, a team, or an individual player were formerly referred to as "fans" (Funk et al., 2018). fans are an integral part of what makes football games so exciting, not to mention a major part of the tradition and culture that surrounds the sport (Kabirin, Rahmati & Sharepour, 2016). While "fans" and "supporters" are often used when discussing sports, especially football, there is an important distinction between the two that is often forgotten in general usage (Kabirin, Rahmati & Sharepour,2016). The typical supporter cares only "a little bit" or "not at all" about the team and the game (Lee Ludvigsen, 2023)

Heere and Dickson (2008) define team (attitudinal) loyalty as "the result of the interaction between negative external changes and the highly developed attitude of an individual, which is characterized by persistence, resistance to change, biasing in cognitive processing, and a guide to behavior based on the interaction between negative external changes and the

individual's attitude" (p. 233). Similar to team identity, team loyalty influences sport consumer behavior, especially future attendance intentions (Hill & Green, 2000; Wakefield &

Sloan, 1995). Team loyalty represents a more resistant, persistent, biased cognition associated with sport teams and is also more solid in the level of commitment to the teams (cf. Funk & James, 2006)

Customer (fan) satisfaction is of great importance to sport organizations (Anderson, Fornell, & Mazvancheryl, 2004; Anderson & Mittal, 2000). For example, the impact of fan satisfaction on favorable behaviors such as event attendance (Matsuoka, Chelladurai, & Harada, 2003; Shonk & Chelladurai, 2008; Wakefield & Blodgett, 1994), intentions to return (Chang, 2000; Theodorakis, Kambitsis, & Laios, 1991) and loyalty to the sport club (Theodorakis et al., 1991; Trail, Anderson, & Fink, 2005) are well-recognized. Fan satisfaction judgments are derived through a multi-variable linear function (e.g., Kellar & Preis, 2003; Preis & Kellar, 2003).
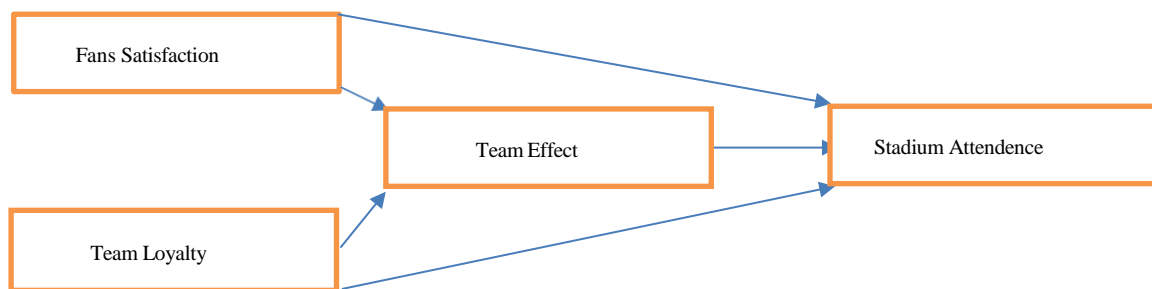
RESEARCH METHODOLOGY

Hypothesis:

H1: fan satisfaction, team loyalty and team effect impact stadium attendance. H1 Fans' Satisfaction has a significant positive effect on Stadium Attendance. H2 Team Loyalty has a significant positive effect on Team Effect.
H3 Team Effect has a significant positive effect on Stadium Attendance.

Research Model:

Population, sample size and Sampling Procedure:

The population fans in attendance at the MA Chidambaram Stadium for IPL matches in 2024. The sample size taken for the study is 106. The data collected was analyzed with 95% confidence level. Random sampling technique was used.

Data Collection Instrument and Measurement of variables:

A questionnaire was drafted with a 5 scale Likert scale for responses which ranged from "Strongly Agree" - 5 to "Strongly Disagree" - 1.

Reliability and Validity

Cronbach's Alpha value was calculated for all three variables to test reliability. The questionnaire was adopted from Bulut and Culha (2010) and Bartlett (2001) for Employee Training, Faragher et al., (2005); Huddleston and Good, (1999) for Job Satisfaction

Variable	Cronbach's Alpha Value
Fans' satisfaction	0.882
Team Loyalty	0.856
Team Effect	0.886

Data Analysis:

SPSS Statistical Package for Social Scientists version 29 was used for data analysis. The data was analyzed for Descriptive Statistics, Linear Regression, Factors and Cronchbach's Alpha.

DATA ANALYSIS:

Regression

Dependent Variable: Stadium Attendance (y)

Independent Variables: Fans' Satisfaction (X1), Team Loyalty (X2), Team Effect (X3) The below data is the regression analysis between all the four variables

Descriptive Statistics

	Mean	Std. Deviation	N
STADIUM ATTENDANCE	2.95	1.482	106
SATISFACTION	2.6179	1.18433	106
LOYALTY	3.242	1.1373	106
TEAM EFFECT	3.3333	1.32470	106

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	Df2	Sig F Change
1	.807[a]	.651	.641	.888	.651	63.542	3	102	.000

Model adjustment for Fans' Satisfaction (X1), Team Loyalty (X2), Team Effect (X3) and Stadium attendance (Y)

Correlations

		STADIUM ATTENDANCE EFFECT	SATISFACTION	LOYALTY TEAM	
Pearson Correlation	STADIUM ATTENDANCE	1.000	.744	.377	.656
	SATISFACTION	.744	1.000	.538	.579
	LOYALTY	.377	.538	1.000	.580
	TEAM EFFECT	.656	.579	0.580	1.000
Sig. (1-tailed)	STADIUM ATTENDANCE	.	.000	.000	.000

	SATISFACTION	.000	.	.000	.000
	LOYALTY	.000	.000	.000	.000
	TEAM EFFECT	.000	.000	.	.
N	STADIUM ATTENDANCE	106	106	106	106
	SATISFACTION	106	106	106	106
	LOYALTY	106	106	106	106
	TEAM EFFECT	106	106	106	106

Correlation between Fans' Satisfaction (X1), Team Loyalty (X2), Team Effect (X3) and Stadium attendance (Y)

a. Predictors: (Constant), TEAM EFFECT, SATISFACTION, LOYALTY

b. Dependent Variable: STADIUM ATTENDANCE

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	150.327	3	50.109	63.542	.000[b]
	Residual	80.437	102	.789		
	Total	230.764	105			

a. Dependent Variable: STADIUM ATTENDANCE

b. Predictors: (Constant), TEAM EFFECT, SATISFACTION, LOYALTY

ANOVA for Fans' Satisfaction (X1), Team Loyalty (X2), Team Effect (X3) and Stadium attendance (Y)

Coefficients[a]								
							95.0% Confidence Interval for B	
		Unstandardized Coefficients		Standardized Coefficients		Sig.	Lower Bound	Upper Bound
Model		B	Std. Error	Beta	t			
1	(Constant)	.219	.280		.783	0.435	-.336	.774
	SATISFACTION	.757	.094	.605	8.033	.000	-.570	.944
	LOYALTY	-.247	.098	-.190	-2.516	.013	-0.442	-0.052
	TEAM EFFECT	.466	.087	.416	5.347	.000	-0.293	.639

a. Dependent Variable: STADIUM ATTENDANCE

Charts

Impact of independent variables on the dependent variables
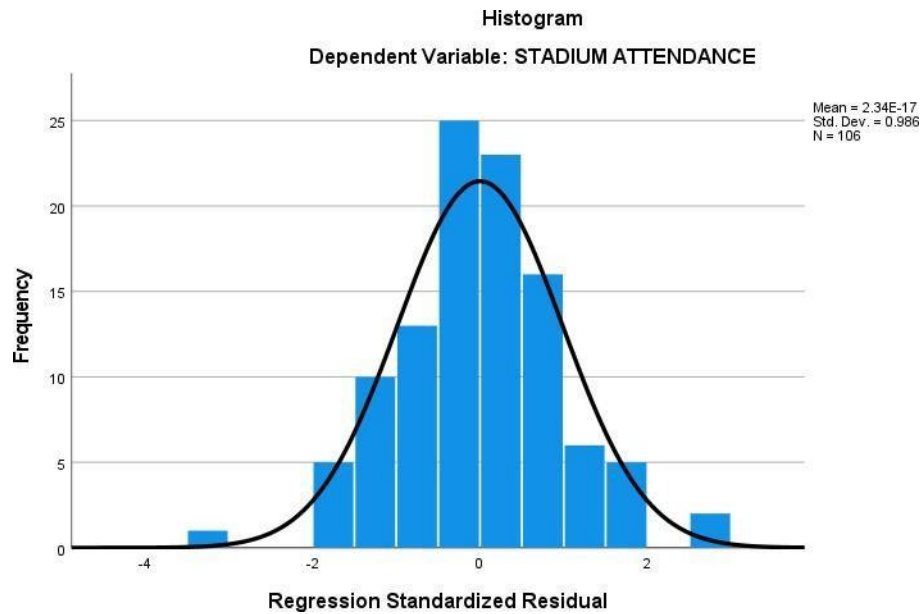
Confirmatory Factor Analysis

Factor Loadings

Factor	Indicator	Estimate	SE	Z	p
Fan Satisfaction	Satisfied	1.181	0.1195	9.88	<.001
	Choice a wise one	1.087	0.1122	9.69	<.001
	Right thing	1.039	0.0937	11.08	<.001
	Happy went to the stadium	1.131	0.1297	8.72	<.001
Team Loyalty	Followed all Matches	1.147	0.1296	8.85	<.001
	Attended all events of team	0.550	0.1299	4.23	<.001
	Devoted to the team	1.023	0.1118	9.14	<.001
	loyal fan of your team	1.252	0.1150	10.88	<.001
	Support even when it loses	1.307	0.1307	10.00	<.001
Team Effect	loyal fan of the team	1.231	0.1262	9.76	<.001
	See team win	1.256	0.1155	10.88	<.001
	Star player	1.210	0.1094	11.06	<.001

Factor Estimates

Factor Covariances

		Estimate	SE	Z	p
Fan Satisfaction	Fan Satisfaction	1.000 [a]			
	Team Loyalty	0.429	0.0938	4.58	< .001
	Team Effect	0.533	0.0815	6.53	< .001
Team Loyalty	Team Loyalty	1.000 [a]			
	Team Effect	0.591	0.0756	7.82	< .001
Team Effect	Team Effect	1.000 [a]			

[a] fixed parameter

Factor Intercepts				
	Estimate	SE	Z	p
Fan Satisfaction	1.00 [a]			
Team Loyalty	1.00 [a]			
Team Effect		1.00 [a]		

[a] fixed parameter

Model Fit

Test for Exact Fit		
χ^2	df	p
149	51	< .001

Fit Measures							
				RMSEA 90% CI			
CFI	TLI	SRMR	RMSEA	Lower	Upper	AIC	BIC
0.880	0.845	0.0762	0.134	0.110	0.160	3821	3925

FINDINGS AND INTERPRETATION:

Mean and Standard Deviation: The dataset comprises 106 observations (eligible for analysis). *Stadium attendance*: Mean is 2.95, standard deviation of 1.482, indicating some variability in satisfaction levels around the mean. *Satisfaction:* Mean is 2.617, standard deviation of 1.1843, (suggesting relatively consistent attitudes towards) . *Loyalty*: Mean is 3.2422, standard deviation of 1.1373. *Team effect:* Mean is 3.333, standard deviation is 1.324 indicating moderate variability in satisfaction levels. According to the statistics, respondents assessed all four variables relatively positively on average, with some variation around the mean values.

Histogram: This setup enables the assessment of the normality assumption of the residuals in the regression model. The close-to-zero mean and the standard deviation close to 1 indicate that the residuals are standardized.

Correlation: The correlation analysis among Stadium attendance, Fans' Satisfaction, Loyalty, Team effect. program satisfaction (N = 106) shows:

Stadium attendance has the strongest correlation with Fans' satisfaction (r = 0.744) and Team effect(r=0.656). *Stadium attendance* has a moderate correlation with loyalty(r=0.377).

Overall, the table shows substantial positive correlations between the variables, emphasizing the linkages Stadium attendance, Fans' satisfaction, Loyalty, Team effect in the sample.

Model Fit: In Model 1, "Stadium attendance average" is predicted by "Fans' satisfaction average", " Loyalty average." and "Team effect". The model has a correlation coefficient (R) of 0.807 indicating a positive correlation between predicted and observed values. with a significant improvement in model fit indicated by an F Change of 63.542($p < 0.001$).

The model's adjusted R Square is 0.641, accounting for the number of predictors. The standard error of the estimate is approximately 0.888.

The model suggests that "Fans'satisfaction average", "Team effect" and "Loyalty average" are meaningful predictors of Stadium attendance average.

ANOVA: The ANOVA table evaluates the overall fit of the regression model, indicating that the inclusion of "Fans' satisfaction average", "Team effect average" and "Loyalty" as predictors significantly explains variance in "Stadium attendance average" (F = 63.542, $p < 0.001$). The sum of squares for regression (150.327) surpasses that of residuals (80.437), suggesting meaningful predictors in explaining variance in the dependent variable. Overall, the regression model is statistically significant ($p < 0.001$), explaining a substantial portion of the variation in Stadium satisfaction average, with predictors including a constant, average Fans' attendance, average Team loyalty and average Team effect.

Residual Statistics: The regression model for "Stadium attendance" provides accurate. predictions closely aligned with observed values, with a mean residual approximately zero (0.000). The standard deviation of residuals (0.875) indicates modest prediction errors compared to the variability of the dependent variable. Standardization enables reliable model performance evaluation across variables or models. Overall, these statistics suggest the regression model effectively estimates "Stadium attendance" with prediction errors centered around zero.

Cronbach's Alpha: The Cronbach Alpha was used to measure the internal consistency and reliability of the data. The alpha values were found to be 0.882 for Fans' satisfaction, 0.856 for team loyalty and 0.886 for team effect. The overall alpha value for all three variables was found to be 0.844 indicating a consistent and fit model, apt for research.

CONCLUSION:

The findings show that fans' satisfaction, team loyalty and team effect have significant impact on the stadium attendance in the Indian Premier League matches at Chennai MA Chidambaram Stadium. The analysis of these factors has wider implications and importance

to cricket franchises and wider sports industry. For teams that are trying to increase the matchday revenue, the paper provides the factors that needs to be given importance. The ability to precisely predict and forecast may help managing resources, fixing prices and logistics more efficient, which in turn will increase the overall profitability of the franchises.

Identifying the factors influencing stadium attendance will also help franchises device their promotion strategy depending on the type of audience and what attracts them the most. In- stadium attendance contracts and collaborations can also be planned based on the forecasts, which become additional sources of income. Further, optimal in-stadium resources like food, water, etc will further enhance experience of fans attending, thus motivating them to experience the games many more times. Good promotion strategy based on factors will reaffirm the loyalty of fans towards the teams, which will assure long-term engagement.

Overall, this study helps franchises to make informed choices over to attract and retain fans in the stadium in the long run. Future studies may look into factors that has stopped locals and fans who despite having proximity to the stadium have chosen to watch the matches on television or other digital media with home comfort. It can also consider behaviour patterns in other IPL hoist cities and perceptions of fans supporting different franchises.

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