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Consumer Willingness and Market-Oriented Development of the Gan Super League Sports Tourism Event: A Multi-Source Survey Study

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Abstract: Regional amateur football can connect sports participation with destination consumption, but sustained demand depends on converting event attention into consumer willingness. This study examines the Gan Super League through literature review, online comment analysis, questionnaires, and interviews. We analyzed 1,046 valid Weibo and Douyin comments and 511 questionnaires using scale tests, exploratory factor analysis, AHP-EWM weighting, and K-means clustering. The event spans 11 cities in Jiangxi, and awareness reached 80.47%. High-, medium-, and low-willingness respondents represented 45.9%, 39.5%, and 14.6%; the active, cautious, and indifferent clusters accounted for 65.75%, 18.59%, and 15.66%. Participation was motivated mainly by interactive benefits, social needs, and match appeal, whereas Jiangxi cultural-tourism experience motivated only 36.69%. The principal marketization constraints were shallow sports-tourism integration, reliance on public subsidies, limited external brand diffusion, a short industrial chain, and uneven livestreaming and support services. The findings indicate that segmented operations, stronger local cultural branding, diversified revenue, upgraded services, industrial linkage, and coordinated stakeholder action could help turn regional event attention into repeat tourism consumption.

Keywords: Gan Super League; Sports tourism events; Consumer willingness; Text mining; AHP-EWM; K-means clustering.

1. Introduction

Sports tourism events have become a practical interface between local identity, visitor experience, and destination consumption. Families and spectators often evaluate an event through price, transport, timing, and the possibility of extending the visit beyond the venue, so event planning must be understood as a travel decision rather than as a stand-alone competition [1]. Empirical studies further indicate that entertainment, aesthetics, and escapism can improve event image and destination image, which in turn shape behavioral intention [2].

The conversion from attention to participation is not automatic. Access and venue quality, perceived value, service reliability, social influence, and the image of the destination can jointly affect whether spectators attend again or recommend the event to others [3, 4]. Event hosting can also influence city branding and word-of-mouth communication, but the effect depends on how the event is connected with local resources and resident or visitor perceptions [5]. A systematized review of sports-event tourism therefore calls for closer integration of event image, destination development, stakeholder coordination, and long-term leverage [6].

The Gan Super League provides a useful regional setting for this issue. It connects amateur football with Jiangxi's red culture, Hakka culture, landscape resources, food, hospitality, and urban activities, while its 11-city coverage offers a broad local audience. The event has obtained substantial public attention and has begun to link tickets with scenic spots, catering, accommodation, and night-time consumption. However, the current growth also raises a concrete research question: can event attention and favorable attitudes be converted into differentiated, repeated, and market-supported consumption? Strategic leveraging research shows that local benefits depend on the coordination of stakeholders and on the activation of destination resources rather than on exposure alone [7, 8].

The consumer side is equally important because a regional event must serve audiences with different levels of recognition, time availability, perceived value, and service expectations. Research on sports cultural tourism in China suggests that media communication, place attachment, perceived behavioral control, and destination-oriented motives may be more influential than competition itself [9]. Event image can also affect destination loyalty through cognitive and emotional pathways, which reinforces the need to examine not only whether consumers are willing to participate but also why they make that choice and what prevents conversion [10].

This study addresses the issue with a multi-source empirical design. Online comments are used to identify public attention, emotional tendencies, and salient themes; a quality-controlled questionnaire measures awareness, participation, motives, attitudes, convenience, value-for-money, and willingness; AHP-EWM combines subjective and objective weights into a composite index; and K-means clustering separates consumer groups with different operating requirements. The analysis then links the measured willingness structure to the event's marketization constraints and develops a consumer-oriented path for differentiated sports-tourism development.

2. Research Design and Data Quality

2.1. Multi-source Data and Sampling

The research population consists of residents of Jiangxi who had heard of or participated in the Gan Super League event. The study combines four sources of evidence. Literature materials establish the sports-tourism and consumer-willingness framework; Weibo and Douyin

comments capture spontaneous public discussion; online and offline questionnaires measure consumer characteristics and intentions; and interviews with event operators, tourism practitioners, and core spectators supplement the quantitative evidence. A visual web-collection tool was used to obtain the public comments. After removing 65 invalid records, 1,046 comments remained, giving a text-data validity rate of 94.15%.

The formal questionnaire was distributed through online channels and fixed offline points at event and tourism settings. The design used regional and demographic quotas to reduce concentration bias: Nanchang accounted for approximately 71% of the intended regional quota and other Jiangxi cities for 29%; the gender quota was 53% male and 47% female; and the age quotas were 5% below 18, 35% aged 18-29, 45% aged 30-45, and 15% aged 46 or above. A total of 650 questionnaires were distributed, 636 were returned, and 511 valid questionnaires remained after cleaning, producing an effective recovery rate of 80.3%. Under a 95% confidence level, a 5% permissible error, and a 0.5 population proportion, the theoretical minimum sample size was 385, so the valid sample met the planned requirement.

Quality control operated at the collection and processing stages. Responses completed in less than 60 seconds were removed, repeated submissions were restricted by unique IP and device rules, and extreme values in consumption budgets or participation frequency were screened using the 3σ rule and boxplots. Incomplete or internally contradictory questionnaires were checked, and the coding and data entry process used two-way entry and random verification. A 91-response pretest was used to revise low-discrimination items before the formal survey.

2.2. Reliability, Validity, And Factor Structure

The pretest identified weak internal consistency in the initial attitude and willingness sections, while the recognition and participation section had a Cronbach alpha of 0.882. The questionnaire was therefore revised to include clearer items on event experience, cultural-tourism value, participation support, convenience, value-for-money, operational assurance, and participation concerns. The formal scale reached alpha coefficients above 0.80 across all reported dimensions: 0.919 for experience and promotion expectations, 0.890 for participation support and format preferences, 0.892 for recognition and basic attitudes, 0.853 for participation convenience and value-for-money, and 0.811 for participation concerns.

The reliability coefficient used in the survey follows the internal-consistency form

$$\alpha = \frac{K}{K-1}\left(1 - \frac{\sum_{i=1}^{K} S_i^2}{S_x^2}\right) \quad (1)$$

Where K is the number of scale items, S_i is the variance of item i, and S_x is the variance of the total score. The formal questionnaire also passed the KMO and Bartlett tests: KMO was 0.929, the approximate chi-square statistic was 7,956.533 with 435 degrees of freedom, and the p-value was below 0.001. Five rotated components explained 63.252% of the cumulative variance in the reported solution. These diagnostics support the use of a composite willingness measure and subsequent segmentation.

3. Multi-Source Evidence of Event Attention

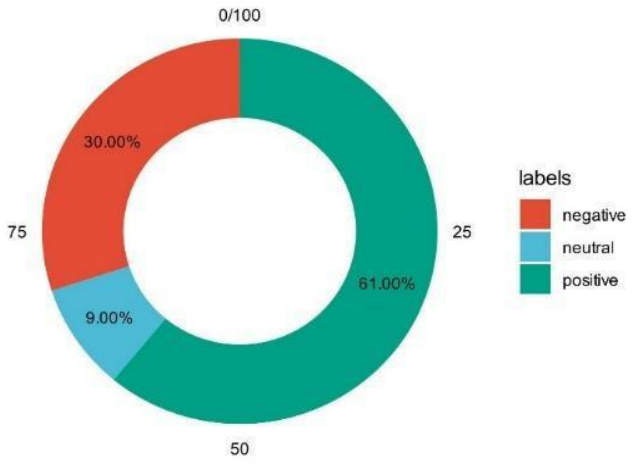
3.1. Event Scale and Search Attention

The event has developed a broad operational base. The 2025 season attracted more than 1.23 million on-site spectators, with an average attendance of approximately 18,000 per match. The event used a combined provincial-level and city-level sponsorship model, and more than 300 scenic spots together with nearly 1,000 catering and accommodation businesses offered ticket-linked benefits. The event therefore has an existing connection with destination consumption rather than only a media presence.

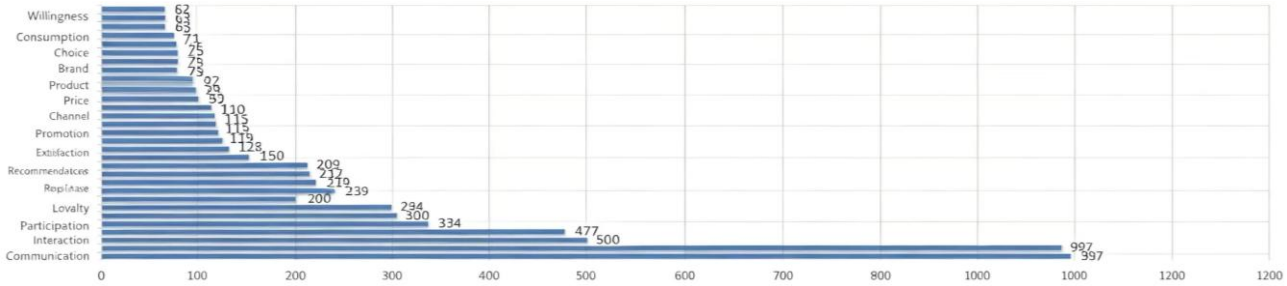
Daily search data record a pulse-like attention pattern. During the July-October competition period, the search index repeatedly exceeded 4,000 points and produced peaks before match rounds, consistent with schedule and ticket information searches. After the November off-season, the index fell below 1,000 points. The event has therefore achieved strong competition-period attention, but its long-term communication still depends heavily on the competition calendar. The regional distribution is similarly concentrated: Jiangxi is the main attention area, while Guangdong, Jiangsu, Shanghai, Beijing, Hunan, Fujian, Hubei, and Anhui also appear among the leading regions. The age chart identifies the 30-39 group as the largest attention group and the 20-29 group as the group with the highest relative index, indicating a potential channel for wider digital diffusion.

3.2. Public Comment Themes and Sentiment

The comments describe the event through three connected themes: the competition itself, the city and fan community, and the sports-tourism linkage. The most frequent terms include the Gan Super League, city, and fans, each appearing more than 200 times in the extracted frequency ranking. The emotional analysis classified approximately 61% of comments as positive, 30% as negative, and 9% as neutral. Positive comments emphasize low ticket prices, collective atmosphere, local pride, scenic-spot benefits, and food-market experiences; negative comments mainly address live-streaming image quality, replay clarity, and supporting services. Figure 1 presents the sentiment distribution and word-frequency ranking.



(a) sentiment distribution.



(b) word-frequency ranking.

Figure 1. Public-comment analysis: (a) sentiment distribution; (b) word-frequency ranking.

The text evidence suggests that the event already has an affective and social basis for consumer conversion, but the cultural-tourism value is not yet the most salient part of public discussion. This distinction matters for marketization. A high level of sports enthusiasm can bring audiences to the event, while a clear local cultural narrative, reliable service, and convenient tourism package are needed to extend the visit and create repeat consumption. The comments therefore support a design in which competition, city identity, and tourism experience are developed as one connected product.

4. Questionnaire Results and Composite Willingness

4.1. Respondent Profile and Awareness

The valid sample contains 52.28% male and 47.72% female respondents. The age distribution is concentrated in the 31-45 and 18-30 groups, followed by 46-60, while respondents below 18 and above 60 form smaller shares. The largest age category is 31-45 at 37.48%, followed by 18-30 at 28.19% and 46-60 at 20.00%. Educational attainment is concentrated in undergraduate or junior-college education and high-school or vocational education. Ordinary employees, workers, individual operators, and contractors form the main occupational groups, and the largest monthly income band is 5,000-8,000 CNY at 40.00%.

The regional sample is centered on Nanchang: 362 respondents, or 70.84%, were from Nanchang and 149, or 29.16%, were from other areas of Jiangxi. Awareness is relatively high, with 80.47% reporting that they had heard of the event. News media is the leading information channel at 60.47%, followed by social media at 45.98%, recommendations from friends or family at 45.67%, and official websites or public accounts at 34.33%. These figures indicate that conventional media creates broad awareness, while social and interpersonal channels offer stronger opportunities for conversion and repeated interaction.

4.2. Participation and Consumption Motives

Participation has accumulated but remains uneven. Respondents who had participated once or twice account for 46.97%, those who had participated multiple times account for 28.96%, and the two groups together exceed 75%. Another 18.40% had not participated but expressed willingness, while only 5.68% had neither participated nor expressed willingness. The distribution points to a substantial conversion pool among people who are aware of the event but have not crossed the participation threshold.

The participation motives are led by interactive activities and benefits at 63.78%, social needs at 63.62%, and appreciation of high-level matches at 62.52%. Checking in at internet-famous event or IP scenes accounts for 57.17%, whereas experiencing Jiangxi cultural tourism accounts for only 36.69%. The result shows that the event's current demand is led by interaction, social connection, and competition; local culture is present but has not yet become the strongest independent reason to participate. This is the central product-design opportunity for deeper sports-tourism integration.

4.3. AHP-EWM Composite Weighting

The questionnaire contains multiple dimensions and individual items, so direct item-by-item interpretation would make comparison inefficient. The study first uses exploratory factor analysis to identify the measurement structure, then combines AHP and the entropy-weight method. AHP introduces expert and interview-based judgments, while EWM gives greater weight to indicators with stronger data dispersion. The first-level AHP weights are listed in Table 1; all reported judgment matrices satisfy the consistency

requirement.

Table 1. First-level AHP weights and consistency results.

Dimension	Weight	λmax	CR	Interpretation
Experience and promotion expectations	0.3751	5.0332	0.0083	Largest first-level weight
Recognition and basic attitudes	0.2147	-	-	Awareness and attitude
Participation convenience and value-for-money	0.1215	-	-	Conversion conditions
Participation concerns	0.2147	-	-	Negative constraint
Participation support and format preferences	0.0741	-	-	Support and social form

The entropy-weight calculation uses the normalized matrix

$$b_{ij} = \frac{a_{ij} - min(a_j)}{max(a_j) - min(a_j)} \quad (2)$$

$$E_{ij} = -\frac{1}{ln\, m}\sum_{i=1}^{m} a_{ij}\ ln\ a_{ij} \quad (3)$$

$$W_{ij} = \frac{1 - E_{ij}}{n - \sum_{j=1}^{n} E_{ij}} \quad (4)$$

For the AHP stage, the consistency index and consistency ratio are calculated as

$$CI = \frac{\lambda max - n}{n - 1} \quad (5)$$

$$CR = \frac{CI}{RI} \quad (6)$$

The combined weight is then defined by

$$W^* = \theta W_A + (1 - \theta) W_E \quad (7)$$

The preference coefficient is set to θ=0.3, so the objective EWM component remains larger while the AHP judgment is retained. The composite index divides respondents into high willingness at a score of 4 or above, medium willingness from 3 to 4, and low willingness below 3. There are 235 high-willingness respondents, 202 medium-willingness respondents, and 74 low-willingness respondents, corresponding to 45.9%, 39.5%, and 14.6% of the valid sample. Figure 2 displays the resulting willingness distribution.

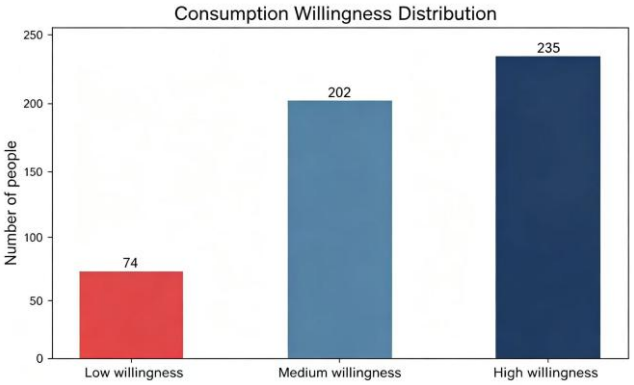


Figure 2. Distribution of high-, medium-, and low-consumption willingness.

5. Consumer Segmentation and Marketization Constraints

5.1. K-means Segmentation

K-means clustering is used to convert the composite index and related questionnaire dimensions into operationally meaningful consumer groups. The elbow rule and silhouette coefficient identify K=3. The three groups are interpreted as active, cautious, and indifferent consumers. Table 2 summarizes their relative level on experience and promotion expectations, participation support, recognition and basic attitudes, concerns, convenience, and value-for-money. Figure 3 contrasts cluster sizes and mean composite-willingness scores across the three groups.

Table 2. K-means consumer profiles and operating implications.

Group	Share	Observed profile	Primary conversion lever
Active	65.75%	High experience, support, and recognition; low concerns; strong on-site and derivative-consumption willingness	Retain loyalty and activate social diffusion
Cautious	18.59%	Medium recognition and attitude; sensitive to convenience, time cost, transport, and value-for-money	Lower participation threshold and strengthen bundled value
Indifferent	15.66%	Low interest and weak content recognition; high concerns; limited time for offline participation	Use lightweight, practical, and community-based contact

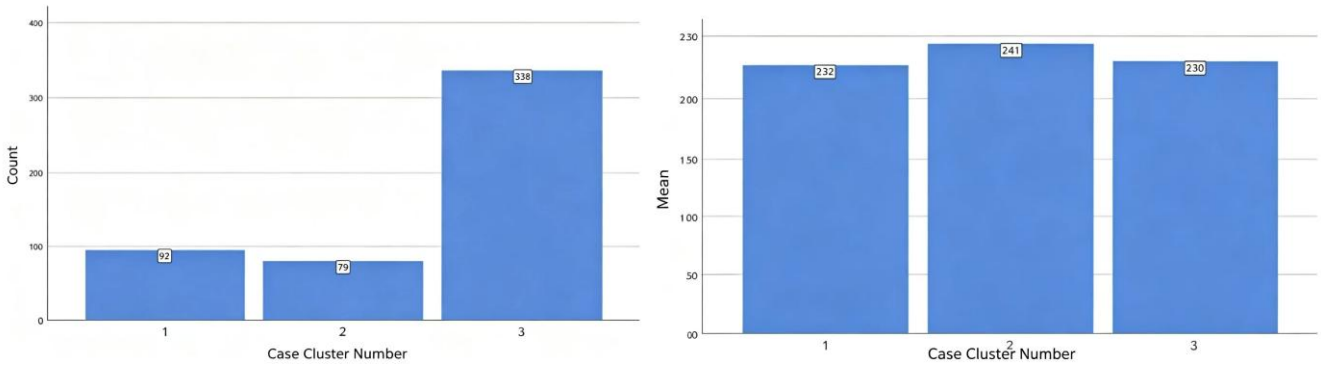


Figure 3. Consumer-cluster results: (a) cluster sizes; (b) mean composite-willingness scores.

The active group is the current consumer base. It is mainly composed of 31-40-year-old enterprise employees and public-sector staff with stable medium-to-high income, available leisure time, and strong interest in local cultural tourism. The cautious group is the most direct conversion opportunity. Its members show medium recognition but hesitate because of transport, time, ticket value, and supporting-service concerns; they prefer livestreams or short videos before committing to an on-site visit. The indifferent group is mainly constrained by work rhythm, family responsibilities, low content interest, and a stronger preference for practical utility than entertainment alone.

5.2. Marketization Constraints and Response Paths

The quantitative and qualitative evidence identifies six connected marketization constraints. Differentiated positioning is insufficient because sports and tourism are often added together without a distinctive local narrative. Operational revenue is highly dependent on public support: government subsidies account for more than 85% of the 2025 event revenue structure, while autonomous revenue from tickets and derivatives remains below 15%. Brand diffusion is concentrated within Jiangxi, the industry chain does not yet fully connect training, fan consumption, venue operation, and tourism services, and the quality of livestreaming, venue support, and derivatives is uneven. Finally, cultural-tourism experience accounts for only 36.69% of the reported motives, below social, benefit, competition, and check-in motives.

A consumer-oriented marketization path can connect each constraint to a measurable operating action. For active consumers, a core-fan membership system, priority seating, cultural derivatives, and city-specific football-tourism packages can consolidate loyalty and encourage user-generated diffusion. For cautious consumers, shuttle connections, weekend scheduling, tiered tickets, combined event-tourism packages, one-stop ticket and scenic-spot reservation, and higher-quality livestreaming can reduce participation friction. For indifferent consumers, online prediction or knowledge activities, community and family football events, and practical daily-consumption coupons can create low-time-cost contact before an on-site conversion.

The event IP should be differentiated across the 11 cities. Red cultural tourism, Hakka culture, ceramic heritage, and landscape resources can be integrated into venue design, halftime activities, derivative products, food markets, and route packages. A regular sports-tourism cultural festival can further combine food, intangible heritage, folk performance, and matches. For revenue diversification, the study proposes a two-level sponsorship structure, tiered ticket prices, differentiated derivative products, official online stores, offline sales points, and deeper ticket-scenic-spot-hotel cooperation. The proposed arrangement also includes a 30%-70% operating-partner and tourism-merchant benefit-sharing structure and a 5%-10% attraction service fee, moving cooperation from simple discounts toward shared traffic and revenue.

Service and governance are prerequisites for the commercial path. Venue facilities, traffic guidance, parking, food, rest areas, professional livestreaming, replay content, customer service, QR-based product traceability, and service agreements with scenic spots, hotels, and restaurants should be improved together. Upstream youth training and downstream fan markets, venue leasing, night markets, and rural football-tourism activities can extend the industrial chain. A provincial event operation center, an industry association, and a funding structure combining public guidance, sponsorship, tickets, derivatives, and tourism revenue sharing can support the transition toward government guidance, market operation, and social participation.

6. Discussion and Conclusion

The evidence supports the practical feasibility of a consumer-oriented marketization path for the Gan Super League. The event already spans 11 Jiangxi cities, awareness reaches 80.47%, and active consumers make up 65.75% of the sample; the AHP-EWM measure and K-means profiles translate these data into identifiable operating groups. A staged strategy can retain active consumers as advocates, lower transport, time, and value barriers for cautious consumers, and reach indifferent consumers through low-effort digital and community activities. Linking local cultural content with ticketing, transport, accommodation, and service upgrades offers a concrete way to extend match attendance into tourism consumption.

These findings are limited to the Jiangxi quota sample, the 1,046 comments and 511 questionnaires, and a cross-sectional period; the sentiment classifier was checked on 200 manually labeled comments. Future research should follow audiences across cities and multiple seasons, validate sentiment classification on larger labeled datasets, and test proposed packages and revenue-sharing arrangements through pilot programs or quasi-experimental designs. Measuring repeat attendance, tourism spending, and independently generated revenue would show which actions are effective and financially sustainable, and provide evidence to refine the consumer-segmentation framework.

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