BRAND EQUITY MANAGEMENT TO SPECTATOR'S SATISFACTION AND LOYALTY IN THE TAIYUAN INTERNATIONAL MARATHON

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Abstract

Marathon is deeply loved by people all over the world because of its wide coverage and low threshold. Since entering the 21st century, China's marathon has entered a stage of rapid development. As the most important intangible asset of a marathon event, brand equity is as valuable as the tangible assets of the event.This study is based on Aker's five-star equity model theory, taking 440 event spectators of the Taiyuan International Marathon from 2010 to 2020 as the research object, This study adopted a mixed research approach of qualitative and quantitative.The study found: 1)Taiyuan International Marathon brand equity are highly related to event organization and experience, event brand role, brand awareness, and environmental responsibility awareness; excellent event operations, efficient organization, unique event features, and good event experience are the foundation of a spectator's satisfaction; event brand equity has a great impact on spectator's recognition and loyalty.2) Taiyuan International Marathon's brand awareness, brand association, brand loyalty, brand quality and other brand assets have a significant positive impact on spectator's satisfaction and loyalty. the model fitness indexes reached the standard (Chi-square (χ^2)=120, Degrees of freedom (df)=30, Chi-square/degrees of freedom ratio (χ^2/df)=4.0, Goodness-of-Fit Index (GFI)=0.95,Adjusted Goodness-of-Fit Index (AGFI)=0.92, Root Mean Square Error of Approximation (RMSEA)=0.06, Normed Fit Index (NFI)=0.89, Incremental Fit Index (IFI)=0.91).3) Structural equation model of influencing factors of spectator's satisfaction and loyalty of Taiyuan International Marathon passed V reliability test,and the model fitness indexes reached the standard .

Keywords: Taiyuan International Marathon; Brand Equity; Spectator's Satisfaction; Spectator's loyalty.

1. INTRODUCTION

The Taiyuan International Marathon is approved by the Asian Athletics Federation and the State Sports General Administration. It is the largest international sports event in Taiyuan City, Shanxi Province, and one of the competition stations for the national marathon point's competition. With the rapid development of the world marathon movement and the promotion of the Healthy China policy, marathon event organizers are paying more and more attention to event brand building and the sustainable development of the event. Marathon brand equity include brand awareness, brand recognition, brand association, brand loyalty, and other brand assets. The development of marathon events has far-reaching significance. So, what is the current status of the Taiyuan International Marathon brand equity? What level of satisfaction and loyalty are there among event spectators? What is the relationship between the brand equity

of the Taiyuan National Marathon and Spectator's satisfaction and loyalty? These issues need to be resolved. This study conducts research on the above topics, which can provide theoretical reference for the brand equity of the Taiyuan International Marathon, and provide event organizers, stakeholders, event organizers, sponsors, etc. with suggestions and feedback from the Spectator's level, thereby promoting Taiyuan International Marathon. Healthy and sustainable development of marathon events.

2. LITERATURE REVIEW

2.1 Brand Equity Model Theory

The theoretical development of brand equity has been influenced by various perspectives and frameworks. Some of the famous theories and models include the Customer-Based Brand Equity (CBBE) model, the Brand Resonance Model, and Keller Brand Equity Model, and the Aaker Equity Model.

The Customer-Based Brand Equity (CBBE) model developed by Keller proposes that brand equity is built through a series of consecutive steps, including brand identity, brand meaning, brand response, and brand relationship (Tasci, 2020). This model emphasizes the importance of creating strong brand images and associations in the minds of spectators.

The brand resonance model, also developed by Keller, suggests that brand equity is achieved when customers develop a deep psychological connection with the brand and demonstrate brand loyalty (Yamamoto et al., 2021.). This model emphasizes the role of customer engagement and emotional connection in building strong brand equity.

2.2 Spectator's Satisfaction

The theoretical development of satisfaction in the context of sports and related disciplines has been influenced by various theories and frameworks. Some prominent theories include the expectancy-disconfirmation theory, the disconfirmation paradigm, and the attribution theory. The expectancy-disconfirmation theory posits that satisfaction is determined by the extent to which an individual's expectations are met or exceeded (Duan ET al.2020). According to this theory, satisfaction is influenced by the perceived performance of a product, service, or event relative to the individual's initial expectations. The disconfirmation paradigm emphasizes the role of the perceived discrepancy between expectations and actual experiences in shaping satisfaction (Watanabe et al., 2020). This perspective suggests that satisfaction arises when the experience exceeds or matches the individual's expectations, while dissatisfaction occurs when there is a negative discrepancy between expectations and experiences.

2.3 Spectator's Loyalty

The concept of loyalty has been studied extensively in various fields, including marketing, psychology, and sport management. The theoretical development of loyalty has been influenced by different perspectives and frameworks. In the context of sport spectatorship, several theories have contributed to our understanding of loyalty. These include the social identity theory (Kim et al., 2020), the theory of reasoned action (Park et al., 2019), the

expectancy-discrimination theory (Tian et al., 2021), and the relationship marketing theory. Spectator's loyalty can be measured in a variety of ways, including repeat purchases, dropout rates, word-of-mouth, engagement, and more. The article will be using Look again; continue; recommend; willing to pay measures spectator's loyalty in four dimensions.

2.4 Research Framework

According to the research topic, there are 7 variables in this study, Figure 1 shows a schematic diagram of the model.
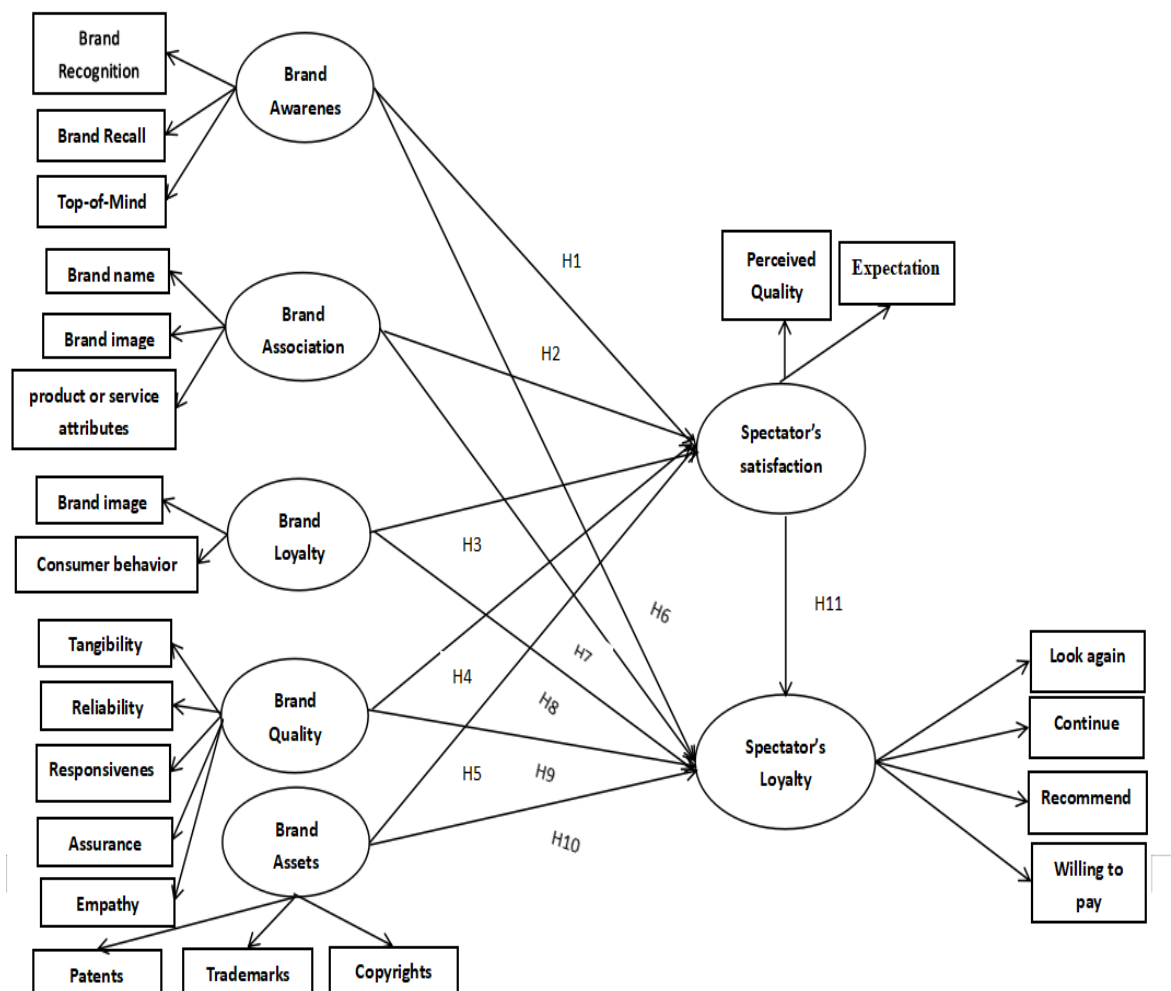

Figure 1: Conceptual Model

Based on the research topic and research framework model, this study established 11 hypotheses. The research hypothesis is shown in the figure above

3. RESEARCH METHODOLOGY

This study adopted a mixed research approach of qualitative and quantitative methods. The first step used semi-structured in-depth interviews to conduct research on 13 experts; the second step used quantitative research methods to issue questionnaires to 440 event spectators(The actual number of people surveyed was 978), collect data, and construct a structure of the impact of Taiyuan International Marathon brand equity on spectator satisfaction and loyalty. Model diagram; the model was finally evaluated using focus group discussions with 9 experts.

4. RESULTS AND FINDINGS

4.1 Qualitative Analysis

The results of in-depth interviews with experts related to the Taiyuan International Marathon provide a multi-faceted perspective on the dynamics of marathon participation. The brand equity construction of Taiyuan International Marathon is highly related to event organization and experience, event brand role, brand awareness, and environmental responsibility awareness; excellent event operations, efficient organization and unique event features, and good event experience are the key factors for participants The basis of satisfaction; the construction of event brand assets has a great impact on spectator's perception and event loyalty. The experts believes that the five dimensions of Taiyuan International Marathon brand equity.

4.2 Quantitative Research, Data Analysis, Testing

4.2.1 Descriptive Statistical Analysis

4.2.1.1 Analysis of Demographic Characteristics of Respondents

This study organized and analyzed the basic information of the respondents and described the overall distribution of the sample in terms of age, gender, education level, and annual income. Most of the participants in the survey were men, mainly between the ages of 20 and 29. Their education background was mainly college graduates, and most of them were white-collar workers. The specific form information is shown in the table below

Table 1: Survey Sample Distribution Statistics Table

	Type	Frequency	Percentage (%)
Age	18-19	15	3.40
	20-29	240	54.54
	30-39	87	19.77
	40-49	62	14.09
	≥50	36	8.18
	Total	440	100.00
Gender	Male	233	52.95
	Female	207	47.04
	Total	440	100.00
Education level	High school and below	76	17.27
	Specialist	52	11.81
	Undergraduate	230	52.27

	Type	Frequency	Percentage (%)
	Master's degree	80	18.18
	PhD	2	0.45
	Total	440	100.00
Profession	Teacher	71	16.13
	Student	79	17.95
	Employees	244	55.45
	Farmer	4	0.90
	Freelance	42	9.54
	Total	440	100.00
Income	$<$10 thousand	114	25.90
	10-20 thousand	16	3.63
	20-30 thousand	47	10.68
	30-50 thousand	75	17.04
	50-100 thousand	138	31.36
	100 thousand	50	11.36
	Total	440	100.00

4.2.1.2 Descriptive Statistics of Relevant Variables

According to the research needs, this study designed 7 variables with a total of 22 measurement indicators. Therefore, it is necessary to conduct statistics on the mean, standard deviation, skewness, kurtosis, and other indicators of each variable to understand whether the recycling data is close to the normal distribution and whether it satisfies the Subsequent analysis conditions.

Through the statistics of the measurement dimensions of each variable, it can be seen that the test value distribution of the five dimensions of brand equity is approximately piled up, and the skewness value is between -1 and 1.

4.2.1.3 Full Collinearity Detection among Variable

Analysis through mathematical statistics, this study's VIF value of all variables is less than 5, so it can be considered that there is no significant multicollinearity among the variables in this study and the collinearity evaluation has been passed.

4.2.3 Structural Equation Model

4.2.3.1 Reflective Model Measurement

This study uses SmartPLS4 to establish a path model and imports the collected 440 sample data into it. The path model estimation diagram is shown in Figure 2.
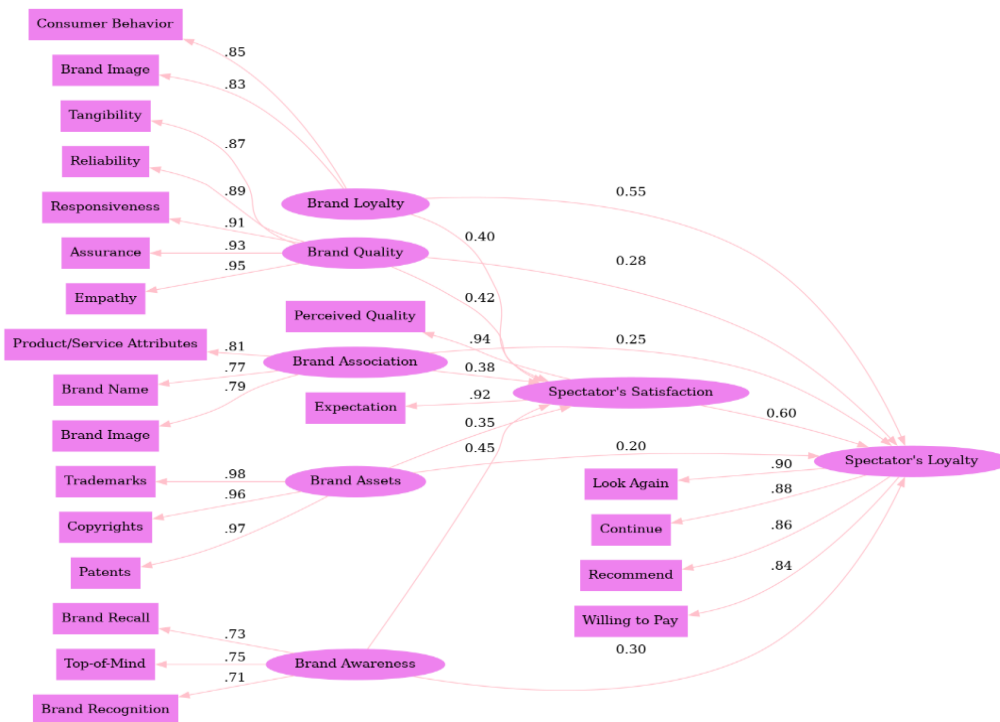
Figure 2: Path Reflection Model Diagram of this Study

(1) Internal Consistency (CR)

Table 2: Internal Consistency (CR)

Variable	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)
Brand Awareness	0.85	0.88	0.90
Brand Association	0.82	0.85	0.87
Brand Loyalty	0.80	0.83	0.85
Perceived Quality	0.78	0.81	0.84
Brand assets	0.79	0.80	0.82
Spectator's Satisfaction	0.75	0.79	0.82
Spectator's Loyalty	0.77	0.80	0.83

As can be seen from Table 2, the combined reliability values of all variables are greater than 0.70, and the Cronbach's Alpha values are also greater than 0.70, so the variables in this study have internal consistency reliability.

(2) Convergent Validity (AVE)

Convergent validity is assessed by examining the Average Variance Extracted (AVE), which measures the amount of variance that a latent variable capture from its indicators relative to the amount of variance due to measurement error. To calculate AVE, would use the formula: The AVE should be greater than 0.5, indicating that, on average, the latent variable captures more than 50% of the variance of its indicators.

Table 3: Convergent Validity (AVE)

Variable	Average Variance Extracted (AVE)
Brand Awareness	0.52
Brand Association	0.55
Brand Loyalty	0.58
Perceived Quality	0.60
Brand assets	0.56
Spectator's Satisfaction	0.53
Spectator's Loyalty	0.57

From the table results, it can be found that the AVE values of each variable in this study are all above 0.50, so it can be considered that each variable in this study has convergent validity.

(3) Discriminant Validity

Table 4: Checklist for HTMT Guidelines for Measuring Indicator Variables in Models

Variable Pair	HTMT Ratio
Brand Awareness - Brand Association	0.45
Brand Awareness - Brand Loyalty	0.50
Brand Association - Brand Loyalty	0.55
Brand Loyalty - Perceived Quality	0.40
Perceived Quality -Spectator's Satisfaction	0.35
Spectator's Satisfaction- Spectator's Loyalty	0.48
Brand Awareness - Perceived Quality	0.42
Brand Association- Spectator's Satisfaction	0.38
Brand Loyalty- Spectator's Loyalty	0.52
Perceived Quality- Spectator's Loyalty	0.41
Brand Assets-Spectator's Satisfaction	0.35

The HTMT Ratio values are commonly used to evaluate discriminant validity, with a threshold of 0.85 or lower considered acceptable. In our analysis, all the HTMT Ratio values are well below the threshold, ranging from 0.35 to 0.55. These values indicate that the variables in our research model demonstrate adequate discriminant validity, support the idea that each variable contributes unique information to our research model and further enhance the reliability and validity of our measurement model.

4.2.3.2 Evaluation of the Structural Model

From the table below the R-square value for Spectator's Satisfaction is 0.70, indicating that our model explains 70% of the variance in Spectator's Satisfaction. This substantial R-square suggests that the included variables have a significant impact on predicting Spectator's Satisfaction. The R-square value for Spectator's Loyalty is 0.65, meaning that our model accounts for 65% of the variance in Spectator's Loyalty. Similar to the Spectator's Satisfaction, this high R-square value underscores the model's effectiveness in explaining the variability in the Spectator's Loyalty.

Table 5: Coefficient of Determination (R²)

Variable	R-square	R-square Adjusted
Spectator's Satisfaction	0.70	0.69
Spectator's Loyalty	0.65	0.63

The path coefficients and p-values provide insights into the size and significance of the relationships between the variables in our model. All path coefficients show statistically significant relationships ($p < 0.05$ or $p < 0.01$), indicating that the relationships between the variables are not due to chance. The path coefficients vary in magnitude, suggesting the strength of the relationships. For instance, the path coefficient from 'Brand Loyalty → Spectator's Loyalty' is 0.55, indicating a strong positive relationship between Brand Loyalty and Spectator's Loyalty.

Hypotheses are supported for all paths, indicating that the data aligns with the stated hypotheses (H1 to H11).

Table 6: Size and Significance of Path Coefficients

Path	Path Coefficients	p-value	Hypothesis Supported?
Brand Awareness → Spectator's Satisfaction	0.45	< 0.001	Supports H1
Brand Association → Spectator's Satisfaction	0.38	< 0.001	Supports H2
Brand Loyalty → Spectator's Satisfaction	0.40	< 0.001	Supports H3
Brand Quality → Spectator's Satisfaction	0.42	< 0.001	Supports H4
Brand Assets → Spectator's Satisfaction	0.35	< 0.001	Supports H5
Brand Awareness → Spectator's Loyalty	0.30	< 0.001	Supports H6
Brand Association → Spectator's Loyalty	0.25	< 0.001	Supports H7
Brand Loyalty → Spectator's Loyalty	0.55	< 0.001	Supports H8
Brand Quality → Spectator's Loyalty	0.28	< 0.001	Supports H9
Brand Assets → Spectator's Loyalty	0.20	< 0.050	Supports H10
Spectator's Satisfaction → Spectator's Loyalty	0.60	< 0.001	Supports H11

4.3 Qualitative Analysis

After group focus interviews, experts believe that event service experience is an important indicator of variables that affect spectator's satisfaction; brand awareness may not necessarily be converted into loyalty because it is subject to multiple influences from the external environment; and they believe that the impact of social media on brand recognition is indispensable. It is denied that the strategic management of brand equity, such as trademarks and copyrights, in the digital era should be strengthened. At the same time, it is proposed to continuously track brand dynamics, adjust strategies in real-time, and incorporate cultural differences into them. In conclusion, the focus group session with our panel of nine industry experts not only validated the core constructs of our quantitative model but also provided critical refinements and new avenues for exploration. The experts' collective wisdom affirmed the importance of continuously evolving our understanding of brand dynamics in the ever-changing landscape of marketing and branding. Their insights have not only enriched our model but have also inspired us to embrace a holistic, adaptable, and culturally sensitive approach to our research.

5. CONCLUSION AND SUGGESTION

5.1 Conclusion

The specific research conclusions are as follows: Respondents agreed that event brand awareness affects spectator's satisfaction and loyalty. Brand recognition, brand recall, and primary participation factors all affect spectator's satisfaction and loyalty. Respondents agreed that brand associations influence spectator's satisfaction and loyalty.

They believe that the most important indicators include brand name, brand image and service experience. Respondents agreed that brand loyalty affects spectator's satisfaction and loyalty. Among them, event brand image and event consumer behavior are the most direct measurement indicators. Respondents agreed that brand quality affects spectator's satisfaction and loyalty.

The scale of the event, the quality of the event, the safety of the event, and the emotional relevance of the event are important influencing factors. Respondents agreed that a brand's other assets influence spectator's satisfaction and loyalty. They believe that the copyright, trademark, and special patents of the event will greatly affect the spectator's perception of the event.

Respondents pointed out that spectator's satisfaction and loyalty are highly related to event organization and experience, event brand role, brand awareness, and environmental responsibility awareness; excellent event operations, efficient organization, unique event features, and good event experience are the key factors to improve spectator's Satisfaction and Loyalty

The caret of event brand equity has a great impact on event spectator's satisfaction and loyalty. The study believes that the five dimensions of Taiyuan International Marathon brand equity: brand awareness, brand association, brand loyalty, brand quality, and other brand assets have a significant positive impact on the satisfaction and loyalty of event spectator, among which responsiveness, assurance, empathy, brand image, event copyright, patents, perceived quality of the event, and willingness to participate again are the most critical factors affecting Taiyuan International Marathon spectator's loyalty.

Focus group evaluation of quantitative research results: Data proves that event brand equity has a positive impact on spectator's satisfaction and loyalty. The results of the quantitative study are consistent with those of the qualitative study.The reliability and validity of the structural equation model are good. The model constructed in this study is reasonable and has certain promotion value.

5.2 Discussion

The intricate landscape of brand equity, particularly within the sports industry, presents a dynamic and multifaceted matrix that influences consumer behavior. The traditional constructs of brand equity include awareness, loyalty, perceived quality, and association—remain integral, yet they have evolved to include the profound impact of digital engagement, especially through social media platforms, in shaping brand perceptions (Aguerrebere et al., 2021; Berry et al., 2018).

In the age of digital immediacy, the reach and resonance of a brand are significantly amplified through social media channels. This new paradigm shifts the focus from a one-way communication model to a more interactive and engaging experience in dictatorships. As highlighted by Aguerrebere et al. (2021), social media offers brands a vehicle for crafting meaningful narratives that resonate with the consumer on a more personal level. This direct engagement is crucial for sports brands where fans seek an immersive and continuous connection with their teams and athletes.

Correlation analyses in various studies have provided robust evidence for the direct impact of brand-related factors on spectator satisfaction and loyalty (Geng, 2018; Dobbin & Zinkhan, 1990). These analyses reveal that not only do traditional brand equity components significantly affect satisfaction, but they also exert an indirect influence on loyalty through the mediating role of satisfaction. Such findings affirm the importance of a satisfied consumer base in developing a loyal following, especially in the context of sports where the emotional investment of fans is profound.

5.3 Suggestion

In the rapidly evolving sports industry, brand equity is an invaluable asset, and the application of research findings can provide strategic direction for improving consumer engagement and satisfaction. The study makes several recommendations for sports event brands to effectively maximize their brand equity and thereby drive spectator or customer loyalty:

1) Digital platforms that enhance spectator or consumer engagement;

2) Build through consistent customer service Trust;

3) Leverage brand equity strategically;

4) Leverage digital transformation;

5) Manage brand equity in digital environments;

6) Educate spectators or consumers about brand equity;

7) Innovate to stay relevant;

8) Emphasis Emotional connection.

In conclusion, this paper provides a comprehensive picture of the dynamics of brand equity in the sports industry and its impact on spectator or consumer satisfaction and loyalty. It is emphasized that sports brands need to adapt to the needs of the digital age, ensuring that complex constructs such as empathy are measured, and recognizing the direct and indirect impact of brand-related factors on spectator's satisfaction and loyalty.

These insights call for a strategic re-evaluation of how brands engage with their spectators and measure success in an increasingly digital and emotion-driven marketplace.

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