Factors Influencing Consumer Acceptance of China's Civil Aviation Brands: An Examination from a Cognitive Perspective

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Abstract. Esteemed international aviation brands have managed to cultivate a loyal consumer base, thereby emphasizing the significance of public acceptance towards Chinese civil aviation brands for the development of China's civil aviation (CCA) market. In this study, we aim to explore the influence of brand expectation and brand perceived quality on the acceptance factors for CCA brands, from the perspective of consumer cognition. Our findings reveal that both brand perceived quality and consumer expectation exert a positive and substantial impact on brand acceptance. Furthermore, it is worth noting that brand image plays a significant role in mediating these two impact pathways.

Keywords: Chinese Civil Aviation Brands; Consumer Cognition; Brand Acceptance; Brand Image; Brand Perceived Quality

1 Introduction

In the era of globalization, aviation interconnectivity has gained significant attention, with countries actively establishing comprehensive aviation networks. However, the Chinese civil aviation (CCA) market faces barriers due to technical and financial constraints, making it dominated by Boeing and Airbus. As the global economy recovers from the pandemic, the aviation industry finds itself at a crucial turning point. In this context, the CCA industry is relentlessly exploring suitable avenues for development to enhance its independent supply capability.

Public acceptance and recognition of CCA brands are crucial for establishing confidence in national brands. Shifting the public's mindset to embrace domestic brands drives the development of CCA industry. However, domestic aviation companies often overlook the audience's perspective when formulating brand strategies, and academic research on CCA brand strategies primarily focuses on reputation and awareness, neglecting the fundamental factors influencing consumer acceptance.

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To investigate the issues, we conduct empirical research to validate the primary pathways that influence the acceptance of civil aviation brands from the consumer cognitive perspective, utilizing brand theory as the foundation.

2 Research Framework and Hypotheses

2.1 Brand Perceived Quality and Brand Acceptance of CCA

Brand perceived quality refers to consumers' subjective evaluation of the overall quality of a product or service they have previously used or consumed [1]. Previous research has established that brand perceived quality has a direct impact on consumer brand acceptance and purchase intention. In the context of the civil aviation industry, the relationship between brand perceived quality and brand acceptance has also been extensively discussed. In an intensely competitive market environment, civil aviation brands that fail to meet consumer needs will face a decline in acceptance, prompting consumers to switch to alternative brands [2]. In such a scenario, the market environment places new demands on the brand quality of airlines. When consumers perceive the quality of an aviation brand favorably, they are more likely to accept that brand [3-4]. Based on these insights, we propose the following hypothesis:

H1: The higher consumers' brand perceived quality of CCA, the greater their level of brand acceptance.

2.2 Brand Expectation and Brand Acceptance of CCA

Brand expectation refers to consumers' preconceived notions and beliefs about a specific brand, which can significantly influence their attitudes and decision-making when considering purchasing that brand. In the civil aviation industry, air travel is a derived demand for consumers, often accompanied by uncertainty. As a result, airlines must consistently strive to enhance consumers' brand expectation to meet the needs of both existing and potential customers [5]. Event marketing and marketing communications are strategic approaches employed by aviation management to elevate brand expectation. Previous research has demonstrated that augmenting consumers' expectations towards civil aviation brands can have an impact on the level of brand acceptance [6]. Based on these insights, we propose the following hypothesis:

H2: The higher consumers' brand expectation towards CCA, the greater their level of brand acceptance.

2.3 The Mediating Role of CCA’s Brands Image

Brand image refers to consumers' cognitive or emotional perceptions when selecting a brand [7]. It encompasses the associations that consumers develop regarding the characteristics of a brand, which can be influenced by factors such as brand perceived quality and brand expectation discussed earlier. Marketers aim to cultivate positive

consumer acceptance by enhancing of brand quality and expectations, thereby fostering favorable brand associations [8].

In the civil aviation industry, brand image plays a significant role in the consumer decision-making process. Airline brand marketing endeavors to enhance brand visibility and influence. When consumers perceive the quality of an aircraft brand favorably or hold high expectation based on positive news coverage, a positive brand image is formed, subsequently influencing their brand acceptance [9-10]. Therefore, we propose Hypotheses H3 and H4:

H3: Brand image mediate the relationship between brand perceived quality and brand acceptance.

H4: Brand image mediate the relationship between brand expectation and brand acceptance.

In summary, we present the conceptual model of our research on the brand acceptance of CCA as depicted in Fig. 1.

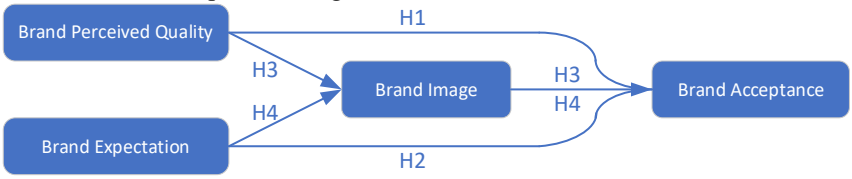

Fig. 1. Conceptual Model.

3 Research Methodology

3.1 Questionnaire Distribution and Data Collection

We employed the questionnaire sampling survey method to collect data for our study. The target population consisted of individuals who had a relevant understanding of CCA brands and products. The survey was distributed through online channels using survey links or QR codes. The data collection period lasted for three weeks. A total of 3,000 questionnaires were distributed through online channels. After three weeks of data collection, we received 2,623 completed questionnaires. After excluding invalid questionnaires, we obtained 1,617 valid questionnaires for analysis.

3.2 Descriptive Statistics

We conducted descriptive statistics on the 1,617 respondents who were familiar with CCA brands. In terms of gender, 54.67% of the target group were male and 45.33% were female. In terms of age distribution, those aged 18 to 50 years old accounted for the majority at 94.55%, with those aged 26 to 30 and 31 to 40 each accounting for over 30%. In terms of occupation, management personnel, full-time students, and technical/R&D personnel each accounted for over 13% of the target group. In terms of the number of flights taken by the target group in the past year, 41.31% took 1 to 2 flights and 25.23% took 3 to 4 flights.

3.3 Variable Measurement

To assess the constructs in the model, we selected appropriate multi-item scales from previous studies, making necessary modifications to suit the current research context. Brand perceived quality was measured across five dimensions: ride service, employee service, reliability, safety, and affordability [5,11]. Brand acceptance was measured using a scale that synthesized existing research, encompassing four dimensions [4-5,11]. Brand expectation was measured across three dimensions: expected progress, expected quality, and attractiveness [12]. For brand image, we referred to existing research and introduced dimensions of awareness, reputation, and satisfaction of Chinese civil aircraft brands, resulting in a total of seven dimensions [13]. All items were rated on a 5-point Likert scale, ranging from 'strongly disagree' (1) to 'strongly agree' (5).

4 Empirical Analysis

4.1 Data Reliability and Validity Tests

For reliability, we chose to examine Cronbach's alpha and CR. As shown in Table 1, except for the Cronbach's alpha and CR values of YQ, which were slightly less than 0.7, the indicators for the other latent variables were all greater than 0.79. The results indicate that the data have a certain degree of reliability.

Table 1. Reliability and Validity Test Results.

	Cronbach's alpha	CR (rho_a)	CR (rho_c)	AVE
JS	0.794	0.794	0.866	0.618
YQ	0.691	0.692	0.829	0.618
YX	0.893	0.894	0.916	0.608
ZL	0.900	0.913	0.925	0.712

Convergent validity was evaluated using factor loadings and average variance extracted (AVE) [14]. Table 1 shows that each AVE is greater than 0.600, indicating appropriate variance extraction. Additionally, the factor loadings of all observed variables under each latent variable are greater than 0.6, indicating good convergent validity.

To ensure discriminant validity, we employed three methods. First, cross-loadings analysis was conducted, confirming that all factor loadings were higher than their corresponding cross-loadings. Second, we applied the Fornell-Larcker criterion (Table 2), which demonstrated that the correlation coefficients were lower than the square root of their respective AVEs. Third, the HTMT ratio was used, and all path HTMT values were below 0.85 (Fig. 2), confirming acceptable discriminant validity. Overall, the test results indicate that the survey exhibits good discriminant validity.

Table 2. Fornell-Larcker standard analyses.

	JS	YQ	YX	ZL
JS	0.786			
YQ	0.293	0.786		
YX	0.535	0.200	0.780	
ZL	0.292	0.183	0.383	0.844

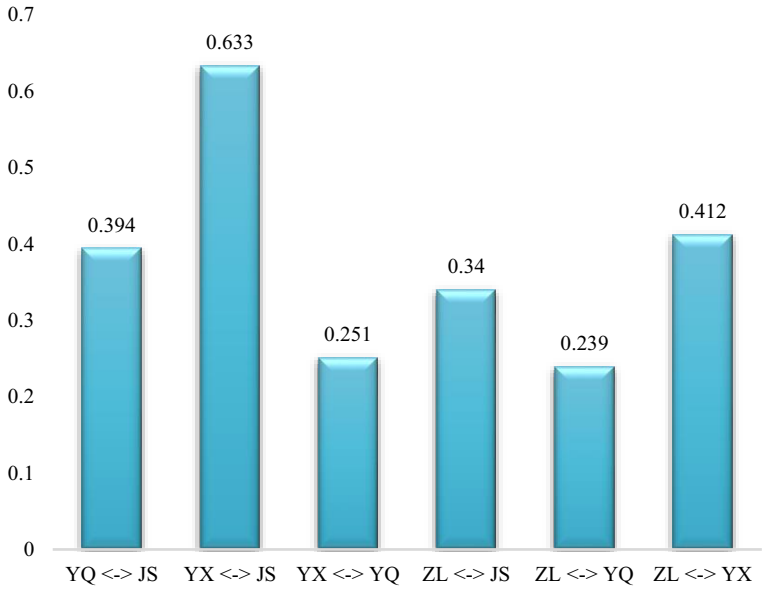

Fig. 2. Heterotrait-monotrait ratio (HTMT).

Furthermore, we conducted collinearity testing and found that the VIF values of all measurement items were below 10, indicating the absence of multicollinearity.

4.2 Path Analysis of Factors Influencing Civil Aviation Brand Acceptance

First, we reported the explanatory power indicators of the basic PLS-SEM model: (1) The SRMR (Standardized Root Mean Square Residual) indicator was typically expected to be less than 0.08. In our model, the SRMR value was 0.057, which met the standard. (2) The d_ULS (squared Euclidean distance) and d_G (geodesic distance) were used to assess the model fit. In our model, the d_ULS value was 0.619 and the d_G value was 0.226, both of which were below the threshold of 0.95, indicating a good model fit. (3) NFI (Normed Fit Index) was a measure that was considered better when it was closer to 1. In our model, the NFI value was 0.849, exceeding the threshold of 0.8. (4) The factor loadings of all observed variables under the latent variables were above 0.76, surpassing the recommended threshold of 0.6.

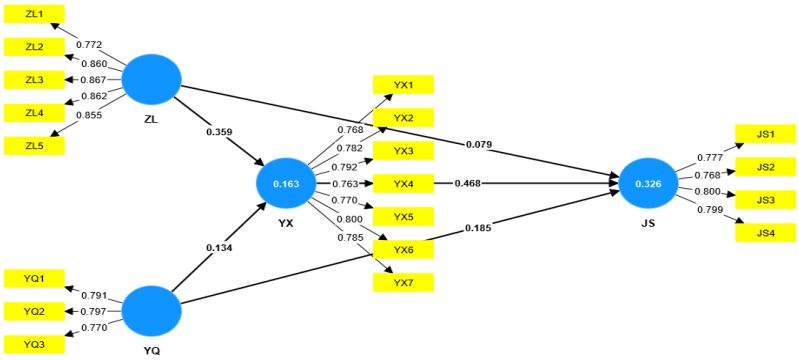

Fig. 3. Results of PLS-SEM Model.

Table 3. Path Coefficients of the Basic PLS-SEM Model.

	Original	T statistics	P values
Brand Expectation -> Brand Acceptance	0.185	7.657	0.000
Brand Expectation -> Brand Image	0.134	4.975	0.000
Brand Image-> Brand Acceptance	0.468	16.17	0.000
Brand Perceived Quality -> Brand Acceptance	0.079	3.542	0.000
Brand Perceived Quality -> Brand Image	0.359	16.61	0.000

According to Fig. 3 and Table 3, our results supported hypothesis H1, the brand perceived quality of CCA positively influenced brand acceptance (β=0.079, P<0.01). Higher brand perceived quality led to greater brand acceptance. Brand perceived quality of CCA was assessed across five dimensions: service, staff, reliability, safety, and cost-effectiveness, with reliability and safety showing the strongest associations. Thus, enhancing perceived quality in terms of reliability and safety is crucial for improving brand acceptance among consumers. Additionally, national consciousness played a significant role, as indicated by Richardson's (1997) study, which found that consumers were more likely to choose CCA brands when there was a substantial disparity in perceived quality. Thus, enhancing the brand perceived quality of CCA becomes a primary strategic objective for civil aviation managers.

Our results supported hypothesis H2, brand expectation of CCA positively influenced brand acceptance (β=0.185, P<0.01). Higher consumer expectations correlated with increased brand acceptance. Brand expectation was quantified in terms of research progress expectations, quality expectations, and brand attractiveness, with quality expectations having the strongest impact. Our findings suggest that promoting brand expectation through news reports contributes to enhancing consumers' brand acceptance of CCA. Currently, China has placed emphasis on publicizing civil aircraft brand reports. For instance, the image propaganda film for the third anniversary of the domestic private aircraft ARJ21 route operation made a remarkable appearance on CCTV. This approach strengthens consumer expectations of the brand while effectively improving brand acceptance among current and potential consumers.

Furthermore, in the direct path analysis, we observed that the brand perceived quality of CCA positively influenced brand image (β=0.359, P<0.01), brand expectation

positively influenced brand image (β=0.134, P<0.01), and brand image of CCA positively influenced brand acceptance (β=0.468, P<0.01). These findings provide a foundation for further exploration of the mediating role of brand image.

4.3 Test of Brand Image Mediating Effect

To test the stability and determine the mediation effect of brand image, we employed bootstrapping (5,000 times) with the PLS-SEM method. Results confirmed positive and significant total effects among the latent variables, supporting hypotheses H1 and H2. Specific mediation effects (Table 4) and total effects (Table 5) of the model were examined. Two impact paths emerged, indicating that brand acceptance of CCA is influenced by brand expectation and brand perceived quality through brand image. This highlights the significant mediating role of brand image in shaping brand acceptance of CCA.

Table 4. Specific Indirect Effects.

	Original	T statistics	P values
Brand Quality -> Brand Image -> Brand Acceptance	0.168	11.547	0.000
Brand expectation -> Brand Image -> Brand Acceptance	0.063	4.703	0.000

Our results supported hypothesis H3 (P<0.01). When the brand perceived quality of CCA was high, it brought consumers a positive brand image and ultimately improved consumers' brand acceptance. Especially when consumers had a good perception of the safety, reliability, and other aspects of CCA brands, they formed a favorable brand image in their minds, which could involve multiple aspects such as reputation and popularity, thereby further enhancing consumers' brand acceptance.

Table 5. Total effects.

	Original	T statistics	P values
Brand Expectation -> Brand Acceptance	0.248	9.314	0.000
Brand Expectation -> Brand Image	0.134	4.975	0.000
Brand Image-> Brand Acceptance	0.468	16.173	0.000
Brand Perceived Quality -> Brand Acceptance	0.247	10.246	0.000
Brand Perceived Quality -> Brand Image	0.359	16.609	0.000

Furthermore, our findings supported hypothesis H4 (P<0.01). CCA brands actively enhanced the popularity and influence of their company's brand through diverse promotional channels, including news reports, short video promotions, and advertising. These efforts successfully attracted increased consumer attention and recognition. As a result, when consumers developed a liking for the brand, they became more inclined to pay attention to and accept CCA brands.

5 Conclusion

5.1 Theoretical Contributions

First, this study examines the mechanism through which brand perceived quality, brand expectation, and brand image influence brand acceptance, from the perspective of consumers and based on relevant brand theories. Specifically, brand perceived quality and brand expectation exert a positive influence on brand acceptance, with brand image playing a crucial mediating role in both relationships. This finding addresses the research gap in the current literature regarding the influencing factors of brand acceptance.

Second, the study finds that brand expectation has a significant impact on brand acceptance, helping researchers establish a substantive link between brand promotion and brand expectation of CCA. It affirms the important role of brand expectation in consumer decision-making and identifies online channels as the primary medium for the dissemination of knowledge and brand image for civil aircraft brands.

Finally, prior studies have overlooked the role of brand image in the theoretical domain of civil aircraft brands. This study confirms the mediating role of brand image in shaping consumer behavior, thus providing a theoretical foundation for the development of theory-driven strategies. By filling the gap in theoretical support within existing consumer behavior research, this study contributes to a more comprehensive understanding of the subject matter.

5.2 Practical Contributions

First, it is imperative for CCA brands to proactively enhance consumers' perceptions of brand safety, reliability, and other attributes through diverse communication channels. This proactive approach will effectively cultivate a positive brand image, elevate brand acceptance, and foster brand loyalty, thus facilitating the sustainable development of the brand.

Second, civil aviation managers should refine their strategies based on the insights derived from this study. While enhancing consumer brand image may lead to short-term market expansion for CCA brands, it may not be the most advantageous long-term strategic choice. The study's identification of the direct and indirect effects of brand perceived quality and brand expectation provides valuable guidance for management to make well-informed decisions.

Finally, aviation companies' management can further enhance the quality of aircraft brands by placing emphasis on product excellence and service quality. This is crucial for addressing the challenges posed by both domestic and foreign civil aircraft markets, where foreign brands such as Boeing and Airbus often attract a substantial consumer base. To effectively compete, management must prioritize the continuous improvement of aircraft brand quality. This necessitates heightened demands on research and development technology as well as management concepts within the civil aircraft industry.

5.3 Limitations and Future Research

First, to enhance the generalizability of the findings, future research should aim to diversify the sample, encompassing a wider range of participants. By including a more diverse sample, the study's conclusions can be extended to a broader population.

Second, future research should consider incorporating additional factors that may influence brand acceptance, such as price, promotional strategies, and the competitive environment. Exploring the impact of these variables can provide a more comprehensive understanding of the factors shaping brand acceptance.

Finally, future research could employ various research methods to gain deeper insights into the factors influencing brand acceptance. Combining experimental research, which allows for controlled manipulation of variables, with case studies, which offer rich contextual information, can provide a more holistic perspective on the topic.

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