



A Statistical Study on the Relationship between Digital Marketing, Brand Authenticity, and Consumer Loyalty of Chinese Brands

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Abstract. Drawing on China's domestic-brand market, this paper assesses how the quality of digital marketing and a brand's guiding philosophy are associated with perceived authenticity and consumer loyalty. After the responses were screened, 413 usable questionnaires measured on a 7-point Likert scale remained. The empirical work combined sample profiling and descriptive statistics with reliability analysis, KMO and Bartlett's tests, a common-method-bias check, diagnosis of the authenticity dimensions, correlations, regressions, Bootstrap mediation tests, and a structural equation model estimated in Stata. The SEM estimates indicate a positive path from digital marketing level to perceived brand authenticity (standardized coefficient = 0.223, $p < 0.001$) and from brand building philosophy to consumer loyalty (standardized coefficient = 0.340, $p < 0.001$). Neither the direct path from digital marketing level to loyalty nor the path from perceived authenticity to loyalty was significant. Bootstrap confidence intervals likewise offered no evidence that authenticity mediated the effect of digital marketing level or brand building philosophy on loyalty. The results point to a two-stage pattern in Guochao (national trend) markets: digital activity may strengthen an impression of authenticity, yet that judgement alone is insufficient to generate repeat buying, recommendation, or emotional commitment. Loyalty is more closely tied to a stable, recognizable brand philosophy whose cultural position is carried through over time.

Keywords: Digital Marketing; Brand Authenticity; Consumer Loyalty; Brand Building Philosophy; Structural Equation Model; Bootstrap Mediating Effect.

1 Introduction

Chinese domestic brands have become highly visible across consumer categories in recent years. That visibility has developed alongside short-video apps, content-sharing communities, livestream commerce, and routine interaction on social networks. On these channels, brand communication is no longer confined to broadcasting a finished message. Product demonstrations, comment threads, consumer-created material, personalized feeds, and member communities allow brand meaning to be negotiated

continuously [1]-[3]. This is especially relevant to Guochao consumption. Buyers judge functional performance, but they also ask whether cultural references are handled with understanding rather than used as decoration, and whether the promise presented online is borne out by the product experience.

Against this background, the analysis addresses three connected questions. It first estimates the effects of digital marketing level on consumer loyalty and on perceived brand authenticity. It then tests whether authenticity predicts loyalty and carries an indirect effect from digital marketing [4]. Finally, it evaluates the paths from brand building philosophy to authenticity and loyalty, including the corresponding mediation pathway.

2 Methods

2.1 Research Design and Data Sources

The evidence comes from a questionnaire administered with 7-point response scales. Screening and cleaning left 413 observations for analysis. Empirical procedures were organized in two stages [5]. In SPSS, the data were cleaned and summarized before reliability, validity, correlation, dimensional, regression, and Bootstrap mediation analyses were performed. Stata was then used to estimate the measurement model, assess overall fit, and examine the structural paths and indirect effects. Because the instrument contained many items and because digital marketing, cultural expression, and authenticity overlap conceptually, the analysis moved through four steps: scoring the original variables, diagnosing the authenticity dimensions, constructing balanced item parcels, and testing the structural equation model.

2.2 Sample Characteristics

Respondents varied in gender, age, educational background, and income [6]. The sample included 194 men (46.97%) and 219 women (53.03%). The two largest age groups were 18-24 years ($n = 183$, 44.31%) and 25-34 years ($n = 186$, 45.04%). Thus, nearly nine in ten respondents were younger than 35. This concentration suits the present focus because younger consumers constitute an important part of the Guochao (national trend) market.

2.3 Statistical Analysis Methods

The analysis began by summarizing the central tendency, dispersion, and observed range of each core construct. Cronbach's α was calculated to evaluate scale consistency, whereas the KMO statistic and Bartlett's test of sphericity were used to judge whether the correlation structure supported factor analysis and structural modeling [7]. Harman's single-factor procedure provided a diagnostic check for common method variance in the shared-source survey. Bivariate associations were then examined with Pearson correlations. Hierarchical regressions assessed the

contributions of digital marketing level, brand building philosophy, and cultural authenticity to consumer loyalty, and mediation was evaluated with 5,000 Bootstrap resamples.

3 Results

3.1 Diagnosis of Perceived Brand Authenticity Dimensions

Perceived brand authenticity was examined as four related dimensions: consistency between brand history and values, authenticity of social responsibility, transparent communication and sincere expression, and cultural authenticity. As Table 1 records, cultural authenticity produced the highest mean ($M = 4.645$). The other three means were lower, suggesting that respondents gave comparatively favorable evaluations to the brands' cultural expression and cultural narratives [8].

Table 1. Descriptive Statistics of Perceived Brand Authenticity Dimensions.

Dimension	N	Minimum value	Maximum value	Mean	Standard deviation
Consistency between brand history and value	413	2.33	6.67	4.432	0.968
Authenticity of social responsibility	413	2.00	7.00	4.455	0.915
Transparent communication and sincere expression	413	2.29	6.71	4.422	0.825
Cultural authenticity	413	2.50	6.50	4.645	0.661

3.2 Correlation Analysis

Table 2 presents the zero-order relationships among the core measures. Digital marketing level was positively related to brand building philosophy, cultural authenticity, and consumer loyalty. Brand building philosophy was likewise positively associated with both cultural authenticity and loyalty [9], while the link between cultural authenticity and loyalty was positive but smaller. Every reported correlation was statistically significant, and the signs were in the anticipated direction.

Table 2. Correlation Analysis of Core Variables.

Variable	Digital Marketing Level	Brand building philosophy	Cultural authenticity	Consumer loyalty
Digital Marketing Level	1	—	—	—
Brand Building Philosophy	0.395***	1	—	—

Cultural Authenticity	0.288***	0.491***	1	—
Consumer Loyalty	0.148**	0.322***	0.117*	1

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. The lower triangle represents the Pearson correlation coefficient.

3.3 Regression Path Diagnosis and Multicollinearity Test

Regression estimates were next used to inspect the proposed paths. With cultural authenticity as the outcome, Table 3 shows positive coefficients for both principal predictors [10]. Digital marketing level yielded $B = 0.127$ ($p = 0.020$), whereas brand building philosophy had the larger coefficient, $B = 0.392$ ($p < 0.001$). The model therefore supports an association between each predictor and more favorable evaluations of cultural authenticity, with brand philosophy providing the stronger contribution [11].

Table 3. Regression Results of Digital Marketing Level and Brand Building Philosophy on Cultural Authenticity.

Variable	B	SE	β	t	p
Gender	0.000	0.057	0.000	0.009	0.993
AgeGroup	0.063	0.048	0.063	1.308	0.192
Education	-0.016	0.035	-0.020	-0.448	0.655
Income	0.053	0.032	0.083	1.685	0.093
DM_Final	0.127	0.054	0.109	2.341	0.020
BBC_Final	0.392	0.040	0.453	9.749	<0.001

3.4 Preliminary Test of Bootstrap Mediation Effect

Indirect effects were estimated from 5,000 Bootstrap samples using the cultural-authenticity diagnostic model. For digital marketing level $\rightarrow$ cultural authenticity $\rightarrow$ consumer loyalty, Table 4 gives an indirect effect of -0.007 and a 95% confidence interval from -0.030 to 0.010. The corresponding estimate for brand building philosophy $\rightarrow$ cultural authenticity $\rightarrow$ consumer loyalty is -0.021, with a 95% interval from -0.077 to 0.031. Because zero falls inside both intervals, neither mediation pathway is statistically supported [12].

Table 4. Results of Bootstrap Test on the Mediating Effect of Cultural Authenticity.

Intermediary path	Indirect effects	Boot SE	95% CI lower limit	95% CI upper limit	Is it significant?
Digital Marketing Level $\rightarrow$ Cultural Authenticity $\rightarrow$	-0.007	0.010	-0.030	0.010	No

Consumer Loyalty					
Brand Building Philosophy → Cultural Authenticity → Consumer Loyalty	-0.021	0.028	-0.077	0.031	No

3.5 Stata Structural Equation Model Testing

Given the weak reliability obtained when cultural authenticity was treated in isolation, a second analysis modeled perceived brand authenticity as the complete latent construct in Stata. This specification retains more of the questionnaire information and provides a steadier measurement basis. The estimated indirect effect from digital marketing level to loyalty through authenticity was -0.010 (95% CI [-0.046, 0.020]). For brand building philosophy, the analogous indirect effect was 0.000 (95% CI [-0.008, 0.008]). Both intervals cross zero; the full latent-variable model therefore also fails to support mediation by perceived authenticity.

4 Conclusion

Using responses from 413 participants, this study separated the roles of digital marketing, brand building philosophy, perceived authenticity, and consumer loyalty in the Chinese-brand setting. The findings are not consistent with a simple sequence in which stronger digital activity creates authenticity and authenticity then produces loyalty. Digital marketing did predict perceived authenticity, but its direct association with loyalty was nonsignificant once the full model was estimated. Perceived authenticity itself showed neither a significant direct path to loyalty nor a reliable indirect role. Brand building philosophy, by contrast, retained a significant positive path to loyalty and emerged as the more dependable explanation of loyalty formation. In practical terms, short-term online exposure may shape how authentic a brand feels, whereas loyalty appears to depend on a clearer and more consistently enacted brand philosophy.

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