

Market correlation analysis of Hongxing Erke products based on structural equation model

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Abstract. With the prosperity of national economy, more and more domestic brand products come into our life. However, the constant fierce competition in the sports brand market makes more enterprises in the development period confused and difficult to find the right direction. This paper takes Erke Enterprise as the research object, analyzes the development experience of the company, the internal and external environment at the present stage, and understands the consumer motivation, consumption behavior and group characteristics. Through cross analysis, we understand the influence of consumers' gender and age on their willingness to buy products, the structural equation model is used to analyze the influence of online and offline purchasing experience, consumption view and product reputation on consumers' willingness to buy Erke products. The analysis draws the conclusion that Hongxing Erke and other domestic sports brands have good market prospects, but there are still many problems to be solved in its publicity and sales. Therefore, it is suggested that Hongxing Erke and other domestic enterprises should take quality assurance as the core competitiveness, strengthen brand culture, and build corporate and cultural confidence.

Keywords: Chinese sports brand; Hongxing Erke; crosstab analysis; structural equation model.

1. Introduction

With the continuous improvement of domestic economic development level, domestic brands have gradually risen and become the main object of consumers' shopping. They are in fierce competition with foreign brands [1]. "National hot wave" is not only an economic phenomenon, but also a cultural phenomenon [2]. However, whether the current "tide of domestic products" will continue for a long time in the future, and how to compete with the products that are more well-known and have been recognized by the public so as to obtain more lasting vitality are still worth further study.

Review the development history of Erke, from the initial emerging enterprise to the listing in Singapore in 2005, becoming the first overseas listed enterprise in the domestic industry. But in the medium term, Erke fell into inventory crisis, exposed the expansion too fast, too high debt. Finally, the transformation strategy was misconceived and gradually weakened. It did not appear in people's vision again until 2021 when the Henan donation incident made it become popular overnight.

This paper takes Erke as the entry point to understand consumers' consumption preferences in Erke products, then explores the advantages and disadvantages of Erke brand, and explores how similar brands can generate long-term attraction and vitality, and finally explores consumers' consumption demand and development potential of Erke and other domestic sports brands. For Erke and other domestic sports products to go abroad to provide improvement suggestions.

2. Study design and data collection

2.1 Preliminary survey

This paper mainly obtains the required data through questionnaire survey. Considering the effectiveness and reliability of the questionnaire, in order to modify the problems in the questionnaire and timely correct the changes, a preliminary survey was conducted before the formal survey. The Cronbach's Alpha coefficient was selected as the basis for measuring the reliability of the

questionnaire in this survey. A total of 50 questionnaires were sent out and 44 were valid. The analysis results showed that the Cronbach 's Alpha coefficient and KMO index of all variables were greater than 0.6, indicating that the consistency of all dimensions reached a good level and the questionnaire was reliable.

2.2 Questionnaire Design

In order to ensure that the questionnaire is scientific and reasonable, this paper referred to previous studies of scholars when designing the questionnaire. Domestic brand identity referred to Lametal (2013), Chaetal (2016) and other studies on brand identity, and consumer efficacy referred to the relevant studies of Ellen etal (1991). The purchase intention of consumers of domestic brands should refer to the relevant research of Zeithaml et al. (1996). A three-tier index system questionnaire was developed and constructed, which consisted of three parts: basic information of the survey objects; Survey respondents to Erke products and sales satisfaction; Survey respondents' expectations and views on the development of Erke enterprises and domestic goods.

2.3 Questionnaire distribution and recovery

In this paper, the questionnaire was distributed through a combination of online and offline. A total of 442 questionnaires were collected and 414 were valid, with the actual effective ratio of 93.6%. A total of 20 questions are included in the questionnaire, which takes Erke as the overall goal how to better develop domestic brands, and is subdivided into 5 sub-goals, including consumers' understanding of Erke products, product purchase intention, product advantages and disadvantages evaluation, and development prospect of domestic sports brands.

3. Data analysis and model validation

3.1 Test of reliability

In order to evaluate the reliability and stability of the questionnaire, the survey used SPSS statistical software and Cronbach's Alpha consistency coefficient to test the reliability of the scale. According to the analysis in the following table, it can be seen that Cronbach's Alpha values of all measurement dimensions are greater than 0.9. Therefore, the results show that the consistency of each dimension has reached a good level.

Table 1. Reliability analysis results of online and offline purchase factors.

The dimension	Cronbach's Alpha	Cronbach's Alpha based on standardized items	number
Reasons to Buy	.994	.995	7
Intention to Purchase	.994	.995	7
Online Evaluation	.998	.998	4
Offline Evaluation	.954	.947	5

3.2 Test of validity

Validity refers to the accuracy of questionnaire measurement, that is, a questionnaire can measure how close the observed variable it wants to measure is to the actual situation. In this paper, the validity of the questionnaire was tested by factor analysis, and the corresponding indicators were screened.

Table 2. Validity analysis results of online and offline purchasing factors.

Quantity of statistics	Coefficient
KMO	.970
Bartlett's sphericity test approximates chi-square	30246.228
df	231
Sig.	.000

It can be seen from Table 2 that the KMO value of the questionnaire is 0.970, greater than 0.8, and the significance probability of Bartlett's sphericity test is 0.000. Therefore, it can be said that the questionnaire of this study has high structural validity.

3.3 Cross over analysis

3.3.1 Cross analysis of gender and willingness to purchase products

As can be seen from Table 3 below, both men and women are willing to buy Hongxing Erke products in terms of whether they are willing to buy products. In terms of gender distribution, women are more likely to buy products than men.

Table 3. Gender * whether you are willing to purchase the product Cross analysis form.

The title	The name	Gender		Total	χ^2	p
		Men	women			
Are you interested in buying Hongxing Erke products?	Yes	115	134	249	0.766	0.381
	No	69	96	165		

* p<0.05 ** p<0.01

3.3.2 Cross analysis of age distribution and reasons for product purchase

It can be seen from Table 4 below that, on the whole, young people pay more attention to the cost performance and quality of products, while elderly people prefer to follow the trend.

Table 4. Age distribution * Product purchase reasons Cross analysis table.

The title	The name	Age				Total	χ^2	p
		post-70s	post-80s	post-90s	post-00s			
Good quality	-3	28	38	32	67	165	7.867	0.248
	Not selected	23	41	24	31	119		
	The selected	24	38	25	43	130		
Beautiful in appearance	-3	28	38	32	67	165	12.489	0.052
	Not selected	36	44	29	47	156		
	The selected	11	35	20	27	93		
High cost performance	-3	28	38	32	67	165	9.208	0.162
	Not selected	13	30	14	20	77		
	The selected	34	49	35	54	172		
Follow the trend	-3	28	38	32	67	165	12.375	0.054
	Not selected	37	58	29	57	181		
	The selected	10	21	20	17	68		
Other	-3	28	38	32	67	165	11.165	0.083
	Not selected	44	78	49	71	242		
	The selected	3	1	0	3	7		

* p<0.05 ** p<0.01

3.3.3 Cross analysis of age distribution and reasons for product purchase

As can be seen from Table 5 below, different age distributions do not show significant differences for the reasons of rough workmanship, but for the reasons of high price, backward appearance, few styles, insufficient publicity and other 5 items. That is, regardless of age differences, consumers believe that Hongxing Erke brand disadvantage is rough workmanship.

Table 5. Age distribution * Cross analysis table of causes of brand weakness.

The title	The name	Age				Total	χ^2	p
		post-70s	post-80s	post-90s	post-00s			
Rough work	Not selected	84.00%	82.05%	76.54%	84.40%	82.13%	2.395	0.495
	The selected	16.00%	17.95%	23.46%	15.60%	17.87%		
The price is too high	Not selected	81.33%	76.07%	71.60%	90.78%	81.16%	15.35	0.002*
	The selected	18.67%	23.93%	28.40%	9.22%	18.84%		
Backward in appearance	Not selected	65.33%	46.15%	35.80%	35.46%	43.96%	20.45	0.000*
	The selected	34.67%	53.85%	64.20%	64.54%	56.04%		
Not many styles	Not selected	46.67%	49.57%	45.68%	33.33%	42.75%	8.088	0.044*
	The selected	53.33%	50.43%	54.32%	66.67%	57.25%		
Lack of publicity	Not selected	53.33%	73.50%	61.73%	42.55%	57.00%	26.16	0.000*
	The selected	46.67%	26.50%	38.27%	57.45%	43.00%		
Other	Not selected	86.67%	97.44%	95.06%	92.91%	93.48%	9.122	0.028*
	The selected	13.33%	2.56%	4.94%	7.09%	6.52%		

* p<0.05 ** p<0.01

3.4 Structural equation model analysis

In this paper, the relevant questions in the questionnaire that can influence citizens' purchase intention of Hongxing Erke products are studied from four aspects: online purchase experience, offline purchase experience, and consumption view and product reputation. And set up the following specific hypothesis:

H1: Online buying experience (exogenous latent variable) has a significant impact on citizens' willingness to buy Erke (endogenous latent variable), and indicators (observational variables) reflecting online buying experience indirectly affect consumers' willingness to buy Erke through their influence on online buying experience.

H2: Offline purchase experience has a significant impact on citizens' willingness to buy Erke, and indicators reflecting the offline purchase experience indirectly affect consumers' willingness to buy Erke through their influence on the offline purchase experience.

H3: Consumption concept has a significant impact on citizens' willingness to buy Erke, and the indicators reflecting consumption concept indirectly affect consumers' willingness to buy Erke through their influence on consumption concept.

H4: Product word of mouth has a significant impact on the public's willingness to buy Erke, and the indicators reflecting product word of mouth indirectly affect consumers' willingness to buy Erke through the influence of product word of mouth.

The structural equation modeling software AMOS was used to obtain the factor load coefficient table of the model, including latent variables, analysis items, non-standard load coefficients, Z-test results, P-values, etc.

Table 6. Factor load coefficient table.

Factor	variable	Nonstandard load coefficient	Normalized load factor	Z	P
Online Purchase Experience	Speed of delivery	1	0.992	-	-
	Speed of logistics transportation	0.993	0.995	0.0090.000***	
	Customer service Attitude	1.022	0.99	0.0110.000***	
	The timely response of customer service	1.018	0.99	0.0110.000***	
Offline Purchase Experience	Richness of product	1	0.99	-	-
	Location of store	1.002	0.991	0.0110.000***	
	Service attitude of staff	1.043	0.991	0.0110.000***	
	Store Environment	1.036	0.994	0.01 0.000***	
View of consumption	Appearance	1	0.297	-	-
	Brand	0.857	0.313	0.2090.000***	
	The price	0.67	0.21	0.21 0.001***	
	Comfort level	-3.714	-1	1.461 0.011**	
Product reputation	Quality of products	1	0.169	-	-
	Product appearance	5.121	0.856	1.7720.004***	
	Means of Marketing	4.822	0.777	1.6750.004***	
	After sale service	5.242	0.859	1.8140.004***	

It can be seen from Table 6 that logistics transportation speed has the most significant impact on online purchasing experience, while store environment has a greater significant impact on offline purchasing experience. In addition, store location and staff service attitude also have a significant impact on offline purchasing experience. The most important factor for consumers to buy sports products is brand awareness. The most important factor for consumers to buy sports products is brand awareness. The most important factor for consumers to buy sports products is product appearance and after-sales service, followed by marketing methods.

4. Conclusion

4.1 Analysis Results

At present, domestic products are gradually becoming the first choice for the young generation. By investigating consumers' consumption preferences and needs for Erke products, this paper draws the following conclusions:

- (1) The product lacks the main audience and the consumer positioning is not clear.
- (2) Product quality is not guaranteed, and product categories are not complete.
- (3) Large online consumption demand, imperfect distribution service and after-sales service.
- (4) The brand strategy is not perfect, and the structure design is single.

4.2 Management Suggestions

(1) Accurately grasp the needs of consumers to provide differentiated services for classified groups. Hongxing Erke should find the current core audience groups, survey their consumption habits and preferences, and carry out targeted product design, marketing design, and price design.

(2) Quality assurance as the core competitiveness, gradually improve the product categories. To create high quality, safety and reliability as the core competitiveness to expand the market, with consumer demand for quality as the main goal, strictly control the quality of products, to provide consumers with comfortable, beautiful, cost-effective sports products.

(3) Optimize online service platform by utilizing new era social media. After the product is out of stock, continue to keep in touch with fans to understand the advantages and disadvantages of the

product. Establish an online wechat group to provide consumers with sports product selection suggestions and product promotion notification.

(4) Improve the brand strategy, increase the diversity of structural design. Hongxing Erke corporate culture is very deep, in the structure of "To Be No. 1" brand marketing process, should not focus on the brand concept on the text, to go deeper into the design of the enterprise brand marketing team, systems, procedures, all kinds of activities.

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