

Brand Management Systems Based on Structural Equation Modelling: Evidence From SME in Xinjiang, China

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Abstract

A new equation model of brand management architecture has been developed which draws its influences from existing brand theory and literature and integrates and extends them. Existing research literature on brand management systems is critiqued and explored. Cross-sectional data from SMEs in Xinjiang, China, show that brand identity, brand relationships, brand value, and brand personality have a positive impact on brand management systems, with brand strategy playing a mediating role in this impact. This study enriches the literature on empirical research on brand management systems, provides evidence for studying Chinese SMEs, and is useful for guiding the practice of brand management.

Keywords: Brand Management Systems, Structural Equation Modelling

Introduction

Brand management is flexible and dynamic, and in the last five years, the business environment is undergoing profound changes. In particular, since the COVID-19 epidemic, the global economic landscape has changed considerably and SMEs are facing many challenges. Li (2020) showed that COVID-19 has had a negative impact on the international trade of SMEs and that companies or individuals with insufficient capital reserves are at risk of bankruptcy if the spread of the virus is repeated. In such a severe environment, brand management of SMEs becomes very important, but the existing literature lacks a certain amount of evidence for systematic research on brand management, especially data from within enterprises in Xinjiang, China has not been found to be used for empirical research on brand management systems, therefore, it is necessary to conduct a survey related to brand management systems to enrich the research literature and evidence for SMEs' brand management by providing theoretical support and experience.

Literature Criticism

Existing research in the literature on brand management systems shows a modular approach. Dunes (2016) studied the impact of brand management systems on the brand performance of service and product business units. This study focused on the service and business modules

of the company. used SK's experience to examine how corporate philosophy and culture influence corporate identity (CI) and how CI and corporate reputation influence brand identity (BI), and to develop a brand management system (BMS) based on CI and BI, this research focused on the modules of corporate identity and brand identity. Santos-Vijande et al (2013) developed a new brand management system scale with three modules on brand orientation, internal branding and strategic brand management and collected data from a sample of 151 knowledge-intensive business service companies. The study showed that BMS effectively helps companies to perform better than their competitors and that market orientation and innovation capabilities are system key prerequisites for development. It can be seen that the connotation of brand management systems has been enriched with the development of the research literature. Only brand management systems that are more in line with the actual development of enterprises can help enterprises to obtain better profits and performance, and therefore the connotation and modules of brand management systems also need to be further developed and explored. The existing literature lacks the integration and development of branding theory and brand management systems, and the authors did not find a more comprehensive study of brand management systems that covers more branding theory.

In China, most of the research on brand management system is focused on large enterprises. Zhang (2015) specifically studied the brand management system for large enterprises, based on seven subsystems, including brand strategy, positioning, model, image, communication, spirit, and integration, etc., to study the establishment of a brand management system suitable for large enterprise groups according to their brand characteristics, and provide empirical references to serve enterprise practice and promote the improvement of the theoretical system of brand management for domestic enterprise groups. Wu et al (2019) argues in a case study that the standard system of 'brand management' is introduced into the various processes of large enterprises to achieve synergy between design, development, production, marketing and after-sales service. However, the majority of the global economy is made up of SMEs, and the importance of SMEs is evident in any country. Small and medium enterprise is the keystone of development of economy and helps to maintain sustainable development of country in globalized world. Peculiarity of SMEs is creation job place and accelerating the growth of countries' economy, which become a key factor of competition in the world market (Zhaishylyk, 2018). Chinese SMEs not only provide 75% of urban employment, but more importantly absorb a large amount of surplus rural labor and laid-off workers from state-owned enterprises, which is of great significance to China's economy, which is characterized by both a transitional economy and a dual economy (Chen & Huang, 2002). However, there is a lack of research on brand management systems for SMEs, and there is a lack of research that combines brand theory and brand management systems.

Literature and Hypothesis Development

The development of brand theory has undergone a long period of change and innovation, and in the last five years the research literature has shown new features. Analysis of Web of Science data using VOSVIEWER with SME BRAND as the keyword shows that the current research hotspots in SME can be clustered into influence relationships, brand relationships, brand management, consumers, social media, originality value, design methodology approach, etc. It can be seen that brand relationships and brand management are becoming more and more important in the last five years of research, in addition to the continuous development of the Internet, which has led to research related to SME branding and social

media. On the periphery of Network Visualization of SME Brand, also it can be seen that brand management - social media - data - informatics form a network of connections, indicating that SME brand research is becoming more and more connected to the Internet and big data, and that the use of the Internet by SMEs is becoming more and more widespread in the context of the ongoing global impact of COVID-19 is also becoming more widespread. At present, the Internet has penetrated many fields such as industry, agriculture and commerce, and while it has injected new vitality into all sectors of society, it has also posed new challenges to the management of SMEs (Yu, 2020).

Table 1

Network Visualization of SME Brand

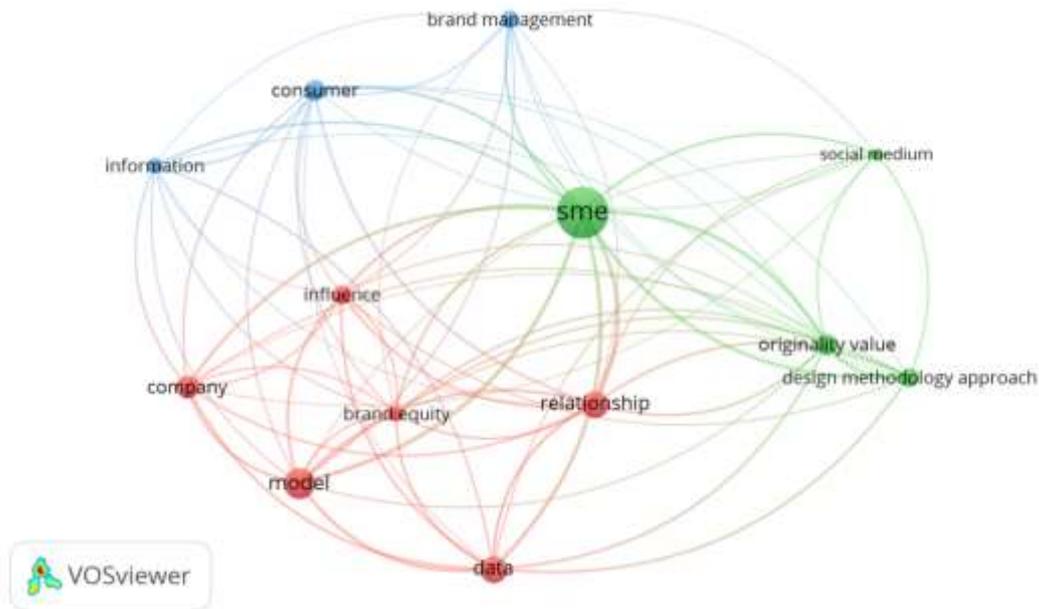
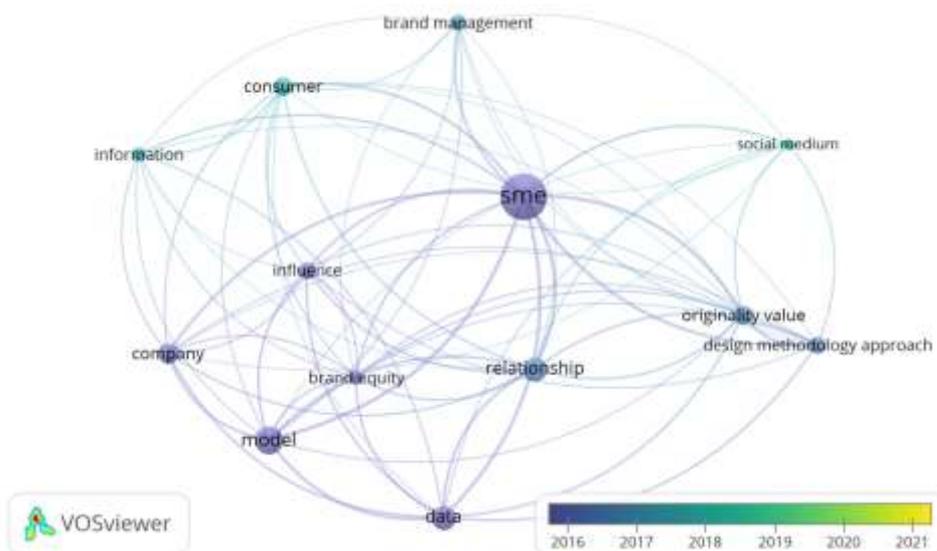


Table 2
 Overlay Visualization



In the overlay visualization timeline from 2016 to 2021, research on informatization, consumers, brand management, and social media is becoming more and more important, especially after 2019, research on brand management and consumers and social media is gradually becoming a hot topic for SME brand research. COVID-19 Since the explosion of 2019 has brought many risks, which has led SMEs to focus on integrating their sales practices, branding activities and other behaviors with the Internet, reducing their operational costs and finding more new ways to improve their business performance. And in fact, the impact of COVID-19 on SMEs is very clear: the number of people producing, and the costs of the company remain the same, the number of days of operation becomes less due to an increase in the number of days closed supply capacity, and the operating income decreases, leading to

reduced profits or losses or even closure. Producers' expectations of the future are based on the uncertainty of the extent to which the future of the virus is controlled, and a fall in the economic level of the business or company leads to a fall in the income of its employees. The income level of the general consumer will lead to a reduction in their personal purchasing power, and they will have to save money and spend it on irreplaceable products such as salt, which are very important to their lives and have a low-price elasticity of demand. This leads to a decrease in monetary liquidity and uncertainty about the future, which also affects the willingness of companies and individual investors to invest (Yun, 2020).

Faced with the challenges posed by COVID-19, SMEs need to focus more on brand management in order to survive in a competitive market, thus making brand management systems even more important. A brand management system should encompass multiple dimensions, and among the existing dimensions, the focus is on the combination of brand sales and services. Some scholars also believe that a brand management system should encompass the whole process of brand operation, according to Pan (2004), a brand management system consists of five major aspects: the foundation of brand management, the organization of brand management, brand research and testing, brand promotion, and brand maintenance. On this basis, this study argues that the basis of brand management contains brand strategy and brand identity, with brand strategy being the basis for managing a brand and brand identity being the basis for consumer awareness of the brand. Brand promotion contains brand personality and brand relationships, as the creation of brand personality and the operation of marketing methods such as promotional activities are forms of brand promotion, while the purpose of brand promotion is to maintain the brand relationship between the brand and all stakeholders, and the maintenance of the brand ultimately requires the enhancement of brand value. Therefore, on the basis of these five dimensions, brand strategy, brand identity, brand relationship, brand value and brand personality should be more specifically integrated into the brand management system. Therefore, the hypothesis for this study is proposed.

Hypothesis1: brand identity, brand relationship, brand value and brand personality influence brand management system positive.

Hypothesis2: brand identity, brand relationship, brand value and brand personality influence brand management system through the intermediary role of brand strategy.

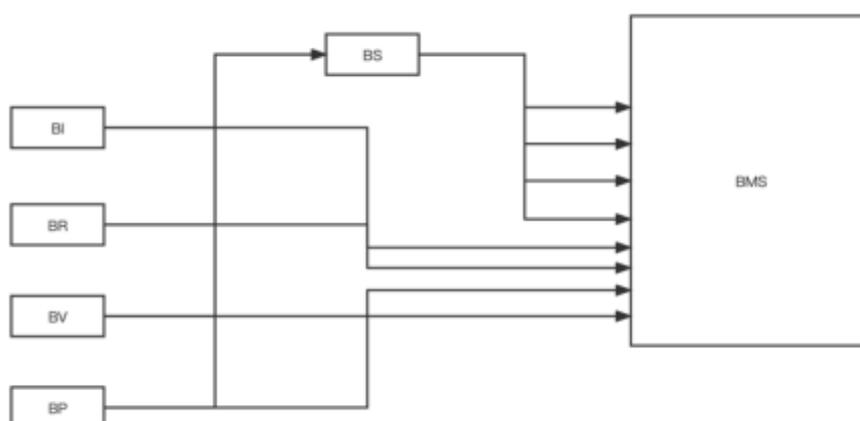


Figure 1: Research Framework

The research objectives and research questions for this study are as follow.

Research Objective

Investigate the specific influencing factors of the brand management system.

Research Question

1. How do brand identity, brand relationships, brand values and brand personality influence the brand management system?
2. What is the role of brand strategy in the influence of brand identity, brand relationship, brand value and brand personality on the brand management system?

Methodology

The research paradigm of positivism is used in this study. The positivist paradigm is more in line with the needs and tastes of scientific research because the study of correlations between things or phenomena, statistical and causal relationships, logical relationships, it requires some certainty and regularity in its object (Zhang, 1990). A quantitative research and questionnaire approach was used to investigate SMEs in Xinjiang, China. The scale used in the study makes further refinements based on the existing literature.

Table 3

Scale and source

Scale	Source
Brand Identity	Xin & Wang (2016)
Brand Relationship	He (2006)
Brand Value	Tang et al (2013)
Brand Personality	Xiang (2010)
Brand Strategy	Tseng et al (2012)
Brand Management System	Lee et al (2008)

The sample was selected through systematic and stratified sampling with a sample size of 500, the collection of questionnaires was carried out using an internet platform, after pilot study followed by statistical analysis and hypothesis testing using AMOS and SPSS software.

Data Analysis

Structural Equation Modelling

Structural equation modelling is the use of certain statistical tools to process complex theoretical models and to evaluate them according to the degree of consistency of the relationship between the model and the data, in order to confirm or falsify the researcher's prior theoretical assumptions. There are many measures of the overall fit of a model, and the fit indices are divided into absolute index and relative index. Absolute fit indices mainly compare the observed and expected variance and covariance and measure absolute model fit. Commonly used absolute dummy indices are the goodness-of-fit chi-square test (CMIN), goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI) and root mean squared error of approximation (RMSEA). The relative index of fit (relative index) is to compare the relative fit of a model with another model, commonly used indices are comparative fit index (CFI), normed fit index (NFI) and non-normed fit index (NNFI). Generally, as long as there are

three fit indices above 0.9, the questionnaire fit index is satisfactory, and the fit is up to standard.

As can be seen in Table 4, the data for the model fit metrics all met the requirements. Among them, CMIN/DF=1.206<5, RMSEA=0.02<0.08; GFI=0.934, AGFI=0.924, TLI=0.992, CFI=0.992 and IFI=0.993 are all greater than 0.9, indicating a good model fit. Therefore, overall, the fit indices of this questionnaire scale are satisfactory, and the fit is good.

Table 4
Model Fitting Indicators

Observation indicators	Evaluation indicators		Value of this model
	Acceptable	Good	
CMIN/DF	<5.00	<3	1.206
RMESA	<0.08	<0.05	0.02
GFI	[0.7, 0.9]	>0.9	0.934
AGFI	[0.7, 0.9]	>0.9	0.924
TLI	[0.7, 0.9]	>0.9	0.992
CFI	[0.7, 0.9]	>0.9	0.992
IFI	[0.7, 0.9]	>0.9	0.993

Path Analysis

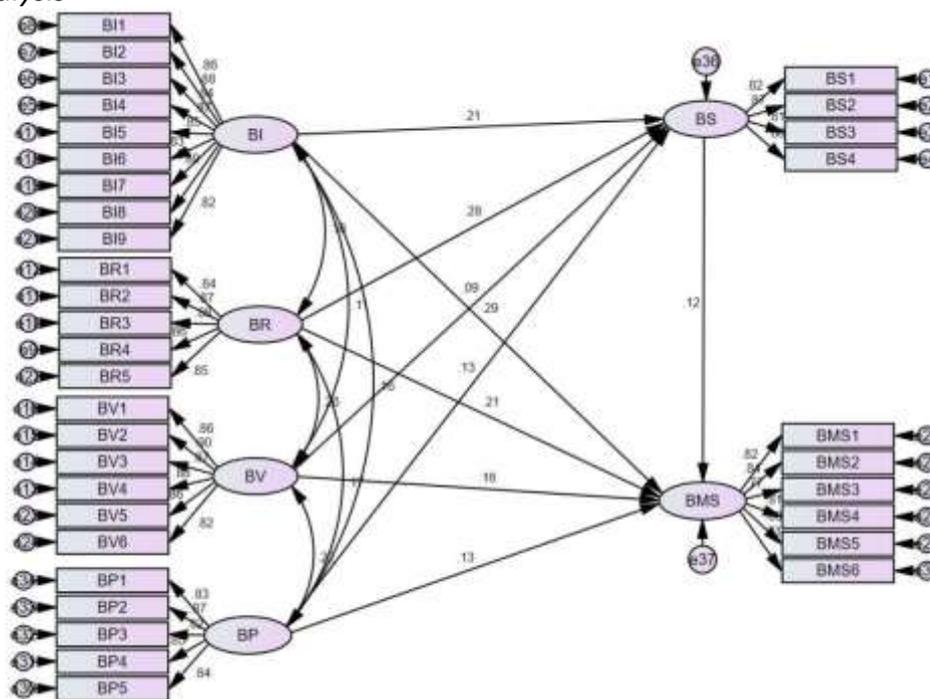


Figure 2: Path Analysis

From the path coefficients, the standardized path coefficients of brand identity (BI), brand relationship (BR), brand value (BV), and brand personality (BP) on brand strategy (BS) are 0.206, 0.279, 0.091, 0.133, and 0.117, with significance $p < 0.05$, indicating that brand identity, brand relationship, brand value, and brand personality have a significant positive impact on brand strategy; the hypothesis holds (Figure2, Table5).

The standardized path coefficients of brand identity, brand relationship, brand value, brand personality and brand strategy on brand management system are 0.286, 0.212, 0.163, 0.131, 0.117, significant $p < 0.05$, indicating that brand identity, brand relationship, brand value, brand personality and brand strategy have a significant positive influence on brand management system; the hypothesis holds (Figure2, Table5).

Table 5
Path Coefficients

			Estimate	S.E.	C.R.	P
BS	<---	BI	0.206	0.042	4.69	***
BS	<---	BR	0.279	0.044	6.046	***
BS	<---	BV	0.091	0.041	2.02	0.043
BS	<---	BP	0.133	0.044	2.932	0.003
BMS	<---	BI	0.286	0.039	6.621	***
BMS	<---	BR	0.212	0.041	4.679	***
BMS	<---	BV	0.163	0.037	3.793	***
BMS	<---	BP	0.131	0.04	3.036	0.002
BMS	<---	BS	0.117	0.044	2.498	0.012

Independent Samples T-Test

Table 6
Group Statistics

Group Statistics					Std. Error
Gender	N	Mean	Std. Deviation	Mean	
BS	Male	252	3.9214	1.04882	.06455
	Female	248	3.9254	1.01903	.06344

The sample statistics were 252 for males and 248 for females, with a mean of 3.9214 for males and 3.9254 for females for brand strategy (Table 6).

Table 7
Test of Homogeneity of Variance

Test of Homogeneity of Variance		Levene Statistic	df1	df2	Sig.
BS	Based on Mean	.171	1	520	.679
	Based on Median	.080	1	520	.777
	Based on Median and with adjusted df	.080	1	519.707	.777
	Based on trimmed mean	.132	1	520	.717

The homogeneity of variance test proved that the p-value was 0.679, which is greater than 0.05, Levene Statistic value was 0.171, Indicates homogeneity of variance and allows for an independent samples t-test (Table 7).

Table 8

Levene's Test

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
BS	Equal variances assumed	.171	.679	-.044	520	.965	-.00399
	Equal variances not assumed			-.044	519.983	.965	-.00399

The independent sample t-test data surface with a p-value (2-tailed) of 0.965 which is greater than 0.05 and is not significant (Table 8). This indicates that there is no significant difference in the choice of branding strategy between males and females, the mode of branding strategy does not differ in the sample and also indicates that whichever branding strategy is chosen does not affect the brand management system in the sample or in the statistics. It also suggests that brand strategy as a mediating variable influencing brand management systems is not influenced by the choice of brand strategy by males and females.

Conclusion and Recommendation

Conclusion

The findings of this study show that brand identity, brand relationship, brand value and brand personality have a positive influence on the brand management system. Brand strategy plays an important mediating role in the influence of brand identity, brand relationship, brand value and brand personality on the brand management system. There is no 100% perfect brand management system that can meet all the needs of SMEs in the process of brand management. Only by continuously exploring and also developing the margins and connotations of a new brand management system can it be adapted to the needs of SME brand management in the current era. Therefore, this study explores the structural equations of a new brand management system and verifies the influence relationships of various variables in it. The conclusions reached show that A brand management system should focus more on the integration and development of brand identity, brand relationships, brand values and brand personality, as a good brand management system must contain very specific brand factors. For example, brand identity can help companies establish a good brand image, brand relationship maintenance can help companies maintain a good relationship between the brand and various interest groups, while the enhancement of brand value will eventually lead to further improvement of the company's business performance, and brand personality can help companies' brands form their own unique market competitiveness and seize market share. Therefore, these several influencing factors have an important significance and role in the construction and development of brand management systems.

Brand strategy is an important part of brand management for SMEs. No matter which brand strategy is adopted, once the brand strategy is determined, all the important components of the brand management system will be systematically coordinated and operated around the brand strategy and objectives. Therefore, there is no perfect brand strategy that can help SMEs to be invincible, as the results of the survey data in this study show that there is no significant difference in the choice of brand strategy among the samples, and that whatever

the brand strategy model is, it is the result of the company's own choice, and only the brand strategy that is suitable for the company can give full play to its mediating role.

Recommendation

Enhancing the brand management system through brand identity, brand relationship, brand value and brand personality

SME should focus on the importance of brand identity, brand relationship, brand value, brand personality. For the development of SME is a systematic process that should combine and operate all components affecting the brand management system in an organic way. Most SME only focus on one aspect of the brand management system and do not have the ability of integrated management, therefore, it is important to enhance and improve the ability and level of integrated management in the practice of management.

Brand Strategy is Crucial to the Development of SME

SME should pay more attention to the role of brand strategy in the fierce market environment. For most SME, flexibility is the main feature of their business and development, and they do not even have a specific brand strategy to guide the specific development of their brands. However, research data show the important mediating role of brand strategy and that this role has meaningful implications for brand management systems, which brand managers and business owners should not ignore. Developing a good brand strategy helps to improve the performance level of the brand management system as a whole.

Limitation and Prospects

Cross-sectional data was used for this study, but as the impact of COVID-19 continues to expand and the market environment changes, so do the attitudes of the sample towards the brand management system; therefore, the cross-sectional data does not fully and accurately reflect the true picture of the sample over time. Future research could be conducted using panel data. In addition, how does the external environment of the brand management system affect its operation and development? The dimensions of the external environment were not measured in this study, and no literature or scales were found for reference. New scales of external environment could be developed for future research. Finally, what other influencing factors of the brand management system are worth exploring by researchers and need further research.

Reference

- Chen, J. G., & Huang, Q. H. (2002). Some problems in the development of small and medium-sized enterprises in china. *Economic Management* (2), 6.
- Dunes, M. (2016). A Distinct Impact of the Brand Management System on Brand Performance Across Service and Product Business Sectors. In *Rediscovering the Essentiality of Marketing* (pp. 693-698). Springer.
- He, J. X. (2006). Establishment and Verification of Brand Relationship Quality Localization Model. *Journal of East China Normal University (Humanities and Social Sciences)*, 38(3), 7.
- Lee, J., Park, S. Y., Baek, I., & Lee, C. S. (2008). The impact of the brand management system on brand performance in B-B and B-C environments. *Industrial Marketing Management*, 37(7), 848-855.

- Li, Y. (2020). Discussion on the Influence of COVID-19 on Economy. *Management & Technology of SME*(2), 2.
- Pan, L. Q. (2004). Analysis on the establishment of brand management system. *Business Watch Magazine* (8), 26-27.
- Santos-Vijande, M. L., del Rio-Lanza, A. B., Suarez-Alvarez, L., & Diaz-Martin, A. M. (2013). The brand management system and service firm competitiveness. *Journal of Business Research*, 66(2), 148-157.
- Tang, Y., Qu, L., Sun, A. L. (2013). An Empirical Study on the Components of Brand Value. *Commercial Research*, 000(009), 110-116.
- Tseng, J.-S., Lin, H.-Y., & Lin, C.-H. (2012). A study on the effect of enterprise brand strategy on purchase intention. *International Journal of Organizational Innovation (Online)*, 4(3), 24.
- Wu, X. L., Wei, F. L., & Gan, X. Q. (2019). Construction and Implementation of Shuigang Brand Management System. *Metallurgical Standardization & Quality* (5), 7-9.
- Xiang, Z. H. (2010). Chinese Brand Personality Scale and Preliminary Evidence. *Think Tank of Science & Technology* (12).
- Xin, L. Q., & Wang, X. Y. (2016). Research on the Influence Mechanism of Tourist Destination Brand Image Recognition Elements on Tourists' Behavioural Intention: Taking Brand Identity as the Intermediary. *Journal of Business Economics* (10), 10.
- YU, Y. M. (2020). Management Mode and Innovation Exploration of Small and Medium sized Enterprises in the Internet Era -- Comment on "World Class Enterprise Management: Theory and Practice". *Finance & Accounting* (12), 1.
- Zhaishylyk, A. (2018). Export competitiveness of SMEs in Kazakhstan,.Thesis,Nanjing: University of Science and Technology.
- Zhang, W. C. (1990). Positivism - the dominant paradigm of Western sociology.*Sociological Research*(4), 6.
- Zhang, S. T. (2015). Study on enterprise group establishing brand management system,.Thesis, SHANGHAI:East China University of Science and Technology.