

Platform Brand Value: Construct and Measurement

—An Empirical Research Based on the Data of Social Media

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Abstract

The article develops and empirically tests a model of brand value. More specifically, this study re-explores how dimensions form and interact from a prosumer perspective. A quantitative approach is adopted in this study, using structural equation model based on covariance (CB-SEM) to explore logical relationships between dimensions of brand value. A new five-dimensional platform brand value is supported, including brand experience, brand knowledge, brand relationship quality, brand citizenship behavior and brand esteem. Furthermore, the interactions between the dimensions are empirically verified. The research takes a prosumer-centric view of platform brand value and in doing so and provides new insight into the effect on prosumers. Additionally, the research offers an improved level of brand value, which is the core starting point of platform enterprises. The findings offer new insight to brand managers, identifying possibility of the presumption logic shaping a new business model, giving some inspiration to the commercial management practice from the micro level. And it was found that the presumption logic offers an original perspective from which to explore platform brand value, and cuts through the core of a complex chain of relationships to explain the logic of a complex interaction.

Keywords

Platform Enterprise, Platform Brand Value, Presumption Logic, Prosumer

1. Introduction

Previous studies on brand value have elicited extensive discussions over how to classify the dimensions of brand value. According to Keller and Lehmann [1], brand value measurement is considered to be a related research topic with a

strategic role to play importance in gaining competitive advantage in marketing (Atilgan *et al.*) [2]. Therefore both scholars and practitioners have focused on identifying the factors that build brand value. Fuelled by the influential study by Vargo and Lusch [3] on a co-creative service-dominant logic (SDL) of marketing, research interest in brand value has grown in recent years. Brand value is the core to understand brand and the branding research, under the new consumption environment brought by the digital technological platform [4]; it is a tool to study the brand value under the new environment of Web2.0 era. Several models of brand value measurement have been available to researchers [5] [6].

However, as theoretical and empirical work has blossomed in different directions, the literature on brand value is largely fragmented and inconclusive [7], and only a few scholars have attempted to establish causal relationships among the constructs [8] [9] [10]. The main purpose of this study is to verify the dimensions of platform brand value and analyse the causal logical relationships among those constructs that is how dimensions interact to further explain the brand value.

Given that strong and positive brand value creates competitive barriers for marketers [11], and influences consumer preference and purchase intention [12], and creates competitive advantages for an enterprise [13], however some scholars have focused on taking the perspective of consumers and considered that the financial brand value is only the outcome of consumers' response to the brand name basing on market perceptions [7], which is usually known as consumer-based brand value, and the dominant stream of its research is grounded in cognitive psychology [14] [15]. However, in the conceptualization and operationalization of brand value, dimensions of brand value should be varied from different perspectives.

In this study, from the perspective of prosumption, selecting Zhihu and Guokr, the knowledge sharing social networking sites is as typical representatives of platform enterprises. This study reconstructs the brand value of platform enterprises and explores the relationship between the formation path. The study seeks to bring together extant work on brand value in order to advance the research questions of: What are the core dimensions of brand value? How do the dimensions interact? Our exposition begins with a systematic review of brand value literature. This first step is pretest; brand value is conceptualized, theoretically interpreted and empirically verified. Secondly, this study discusses the functional relationship among the five first-order constructs of brand value, establishes the hypothesis and forms the structural model, and combines and develops the scale questionnaire in the main study according to the scale verified by pretest. Thirdly, according to the research experience and statistical methods, the validity and reliability of the scale and sample data are empirically tested. Finally, according to the data of verification results, the hypothesis is tested and performs path analysis on test prejudgment. In doing so, we aim to contribute to further verify dimensions of brand value and interaction relationships among them. Therefore, the path relationship between the brand value of the plat-

form-type enterprises has been detailed.

2. Literature Review

2.1. Brand Value

Since the 1990s, brand research focuses on the components of brand elements and brand equity is the most basic and core construct in the research of brand management [15] [16]. Keller and Lehmann [16] proposed a brand value chain model, which helps to comprehensively understand the process of brand value creation under the goods-dominant logic.

The conceptual model of brand can be generally divided into three categories. Firstly, value has been explored in relation to the value for the firm [17]. Aaker [13] [14] divides the brand assets into five aspects: brand awareness, brand loyalty, brand association, brand perceived quality and other exclusive brand assets. What is more, the study by Aaker [13] refines five dimensions, which are divided into 10 specific evaluation indicators. Secondly, Keller [15] defines brand equity from a consumer perspective and discusses how to measure and manage equity, and the practice community proposed the concept of brand equity [18]. While value can be derived through interaction with the firm and its offerings, it can also arise through a process of consumption, which may be mostly independent of the company's intervention or exchange [3] [19]. And in the interactive process, consumers get the recommendation value, influence value and knowledge value of the brand [20]. Thirdly, the concept of value co-creation redefines the meaning of value and the process of value creation, and marks the transformation of the relationship of value creation between consumers and brands [21]. The customers and other stakeholders all play important role to determine value co-creation but customers' role is more prominent as compared with other stakeholders [19] [22]. Thus a growing number of brands are embracing co-creation as a new support mechanism for competitive advantage [23]. Yadav and Pavlou [24], Yi and Gong [25] and Shen Lei and Wei Xiaoyong [26] study value co-creation in the field of prosumption. Ritzer and Jurgenson [27] propose an integrated model of production and consumption.

2.2. Service-Dominant Logic

Service-dominant logic theory [3] is first officially proposed. They share the common thread that value is always determined by the beneficiary (sixth fundamental principle of SDL) [22]. What's more, Vargo and Lusch [22] believe that in the process of value creation, consumers are no longer considered as an object resource (or object of service), but an instrumental resource (a resource that can be utilized). The fundamental premise of service-dominant logic is that the customer is an active creator of value [3], in an interactive communicative cycle of the customer-brand relationship [28]. Based on service-dominant logic, research on marketing, strategy and other fields has been expanded or even subverted in content. For example, Vargo and Lusch [29] think that from the pers-

pective of service-dominant logic, the traditional 4P combination of product, price, channel and promotion can be extended. And branding is a dynamic and social process, reflecting the characteristics of the digital age of stakeholders' focus [30], and Fournier and Avery [31] puts forward Open Source Branding. Furthermore, fuelled by the influential study by Vargo and Lusch [3] on a co-creative service-dominant logic (SDL) of marketing, research interest in VCC has grown in recent years. That is, value is created by consumers and businesses. In the follow-up study, this theory is further refined, and ten theoretical viewpoints are put forward [29].

The service-dominant logic theory breaks the cognitive framework of traditional product-dominant logic and is the inevitable result of the development from industrial economy to service economy. The author believes that the emergence of service-dominant logic is the result of economic development. The evolution of research paradigm and the development of marketing means are the inevitable trend of economic and social development. The service-dominant logic is more suitable for the current society that is gradually moving toward "prosumption".

2.3. Prosumption Logic

Brand value comes from consumers, and most research in the marketing field is based on consumer brand value [32] [33]. The value chain of Porter [34] indicates the consumers purchase merchandise with a series of steps from purchases to sales. Most experts focus on studying what consumers buy, but ignore what they do, in which consumers are treated as passive recipients rather than creative individuals, and separating consumption and production artificially [35]. Over the last two decades, scholars and practitioners have criticized the dichotomy of prosumption, and believe that production and consumption are inseparable [27] [36]. Prosumption refers to a process in which people adapt, modify or transform the product, integrate personal creativity and product, involving a series of continuous activities of production and consumption [37]. Prosumption is the process of value co-created by the individuals and the sellers [35]. Because there exist some differences between production and consumption with customer centralism [38], thus prosumption is not only the simple collection of production and consumption, but requires participation and innovation [39]

At present, the widely recognized definition proposed by Ritzer and Jurgenson [27] is that prosumption is a series of continuous activities without any difference between production and consumption, consumption which are integrated rather than focusing on one or the other. Ritzer [40] conceptualizes the prosumption as a continuum of both production and consumption, in which the continuum is expounded as "prosumption as production", "balanced prosumption" and "prosumption as consumption". Under service-dominant logic [3], the study by Prahalad and Ramaswamy [41] found that the value co-creation suggests that value of a product or a service is not only determined by manufacturer

or supplier, but it is co-created by manufacturers or suppliers, consumers and other stakeholders [30] [42]. Specifically, social capital theory and service-dominant logic [3] complement each other and both theories suggest prosumer play a key important role in value co-creation process and provide new ways to scholars to figure out how prosumers allocate economic, intellectual and social capital resources [43]. On above basis, the dual role of prosumer as consumer and producer in prosumption process can be observed in value co-creation process [44].

The prosumers' value is a construct that corresponds to the perceived value in the marketing literature and is defined as a comprehensive utility of the prosumer content on the website. Through previous research, the author finds that the prosumers' value has two dimensions, which are expressed as content consumption value and content regeneration and communication value. The prosumption activities contain the production and consumption of information. Therefore, the prosumers' value is a theoretical construct that can reflect the value of content consumption and regeneration.

2.4. Platform Theory under Web2.0

Platform-based enterprises are the phenomenal products of the Web2.0 era, which are a kind of business operation mode different from traditional businesses. They are a bridge connecting all stakeholders. They are “de-intermediation” and “intermediate economy” for traditional businesses. The core of mediation is built on a variety of complex channels and directly connected to consumers, playing the role of carrier and media. At the same time, in all kinds of business models, different from traditional enterprises, platform-based enterprises no longer play the leading role in the process of value shaping and evolve into source and communication channels of various information.

Due to the widespread existence and rapid development of digital platforms such as virtual brand communities and social media, a wider range of consumers and other stakeholders constitute the brand's operational resources. Collaborative consumption often takes place through digital sharing platforms in which prosumers perform sharing activities in the form of trading, bartering, renting, and lending of services, goods and transportation solutions [45] [46] [47].

In a digital interactive environment, products are no longer “finished products” in the traditional sense, but rather through participants (usually consumers and their associated social networks) and organizational participants (usually companies and their associated organizational ecosystems) interactively creating products in an interactive system environment [4]. The idea of the digital interactive platform has changed the traditional concept that products and services should be optimized according to a set of fixed characteristics and attributes, recognizing that value is no longer just a function of product characteristics and service attributes, but it is realized through the interaction between digital platform components. Considering the essence of value creation, the consumer be-

havior under the platform interactive business situation has produced a qualitative leap, and the presumption is more in line with the developing trend in the digital age [48]. Moreover, consumers are connected by multiple digital devices or channels, interacting with each other, expressing opinions and suggestions on brands, consumers and other stakeholders such as enterprises jointly shape the value and significance of the brand [45]. This changes the traditional creation in which the creation is completed by the enterprise and the consumer is the passive and obedient receiver [41]. The concept of digital interactive platform products changes the logic that brands create value through exchange [49], and has become the logic of creating value in interaction.

3. Conceptual Framework and Hypotheses

Zeithaml's "quality-value-behavior" approach-purpose chain model [50] explores the beliefs of producers, the evaluation of the effectiveness of website content, and the logical relationship between brand and market performance [51]. The research results prove the positive impact of the prosumers' value on the brand value. This part of the research will be based on this macro-path relationship. How the utility is generated step by step and how the different dimensions interact, starting from the perspective of describing this micro process, and referring to the inter-dimensional influence relationship [10], the conceptual model is constructed as follows (see **Figure 1**).

3.1. The Effect of the Sensory Level on the Relationship Level

When the prosumers have had a good experience with the platform, they will be encouraged to develop a deeper understanding of the platform, so that they can have a fuller understanding of the platform and establish a personalized brand image in their minds, and establish a unique personalized relationship with this platform, basing on this research to make assumptions:

- H1. Brand experience positively affects brand knowledge.
- H2. Brand experience positively affects brand relationship quality.

3.2. Relationship between Dimensions of Brand Relationship

Although the brand knowledge and brand relationship quality belong to the

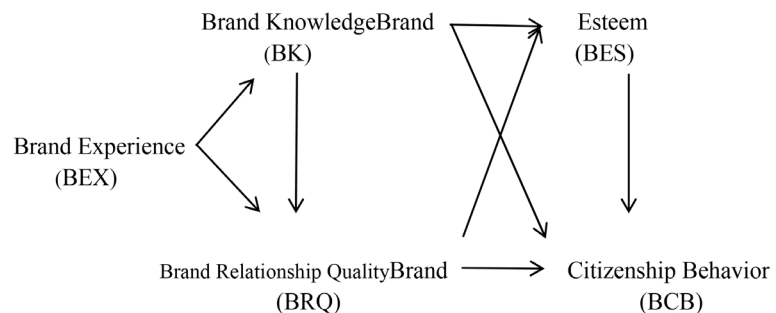


Figure 1. Conceptual model.

brand relationship dimension, but when the brand projects a unique image in the minds of the prosumers, it will create a relationship based on this understanding with the brand. For example, when the prosumers regard this platform as a symbol of knowledge, prosumers' relationship with the brand will be more similar to the teacher. If the prosumers use the platform as a channel for confession and emotional venting, the relationship will be more similar to the loved ones, basing on this research to put forward the hypothesis:

H3. Brand knowledge positively affects brand relationship quality.

3.3. The Effect of Brand Relationship Level on Behavior Level

When the prosumers have a unique understanding of the brand based on their own experience, they have a personalized image of the brand in their minds, and after forming a certain relationship with the brand, as the deepening of understanding and relationship, finally, which will generate their strong enough motives for its brand-related beneficial behaviors, prompting them to promote and even admire the brand and consciously maintain brand image and brand users. When they subconsciously feel the brand good enough, it will even inspire resistance or behavior against other similar brands, and form a continuous using habit, and generate more diversified behaviors under this psychological drive. Based on this research, hypotheses are proposed:

H4. Brand knowledge positively affects brand esteem.

H5. Brand knowledge positively affects brand citizenship behavior.

H6. Brand relationship quality positively affects brand esteem.

H7. Brand relationship quality positively affects brand citizenship behavior.

3.4. Relationship between Dimensions of Brand Behavior

If the prosumers reach enough level of respect for the brand, in addition to having sufficient loyalty to the brand, they will spontaneously generate a series of behaviors that can maintain the brand image or develop the brand. These behaviors are not limited to promoting the brand, and making the altruistic behavior and even environmentally friendly behavior have pushed it to another level of behavior. Based on this research, hypothesis is proposed:

H8. Brand esteem positively affects brand citizenship behavior.

4. Research Method

4.1. Selection of Methods

4.1.1. Literature Research

The literature research method is mainly based on the research questions and purposes to illustrate the basic context of the existing research on brand value, further to systematically sort out the existing research results and summarize the main theoretical results and shortcomings. Through this method, this paper first expounds the theoretical background of brand value. Secondly, based on the existing research, this paper puts forward the theoretical constructs of the platform

brand value, as such lays a foundation for the empirical study among them. Most of the literature covered in this paper is derived from authoritative journals with high academic influence in the field, including *Journal of Marketing*, *Journal of Marketing Research*, *Journal of Consumer Research*, *Marketing Science*, *Journal of Interactive Marketing* and so on.

4.1.2. Questionnaire Method

Questionnaires are the most common method of consumer behavior research. This paper adopts the questionnaire survey method to obtain the first-hand data about the consumer's differentiated attitudes toward Zhihu and Guokr. This study adopts two sets of questionnaires. The first was designed to develop platform brand value scale in the pretest, and the second was to explore the formation mechanism of the platform brand value in the main research. Questionnaires were distributed through offline paper and online platform.

4.1.3. Scale Development and Structural Equation Model

To estimate and evaluate the proposed model (see **Table A1** and **Figure 1**), the structural equation model based on covariance (CB-SEM) is used. SEM is a statistical method that allows a set of relations observed and latent variables to be examined. In general, the SEM approach enables to perform multiple regression analysis on factors of constructs. What's more, it facilitates to combine exploratory factor analysis with multiple regression analysis. It also enables the introduction into the analysis of latent and observed variables, which promotes the model's ability to detect relations among variables [52].

4.2. Pretest

4.2.1. Research Sample

The pretest first conducted a qualitative study. The study used an open questionnaire to conduct research. The interview questionnaire was distributed through online and offline channels. The cumulative number of interviews was 100, of which 83 were valid interviews. The population was in the lower age group. Students are predominant, with a slightly higher proportion of women than men. Then the author conducted the dimension research of the value of the prosumer based on the qualitative research results, and combined the results with the main research scale, to select the same group for simultaneous release and recovery, and analyzed the data separately.

The scale multi-items in pretest set brand experience, brand knowledge, brand relationship quality, brand esteem and brand citizenship behavior to be latent variables, and their sub-dimensions to be explicit variables. With the aim of empirically testing a theoretical model, this study chose a questionnaire survey method. Samples are drawn from users in knowledge sharing social networking sites, and more than 90% of them have used Zhihu/Guokr. The questionnaires were distributed through Zhihu, Guokr and other online and offline channels. A total of 180 questionnaires were distributed and 137 were collected, of which 109 were valid. Among all valid respondents, males account for 43.12% (47), females

account for 56.88% (62), 80.73% are aged 18 - 25 (88), 72.48% are students (79), which is in line with demographic characteristics of main study.

4.2.2. Initial Scale Construction

Research on scale or index construction benefits by employing dimensions for which scales have already been developed and the anchor dimensions are distinctly identifiable from research in basic disciplines such as psychology (e.g. brand personality scale [53] or brand attachment [54]). In the brand knowledge, brand relationship quality, brand esteem dimension, the author compared the description of the problem measured by the topic and the classic scale, and drew on some brand value dimension measurement items of Aaker [13] and Yoo and Donthu [55] and Thomson *et al.* [54]. At the same time, the author judged the expressions of some measure items are more in line with the connotation of the rooted themes [56]. In the dimension of brand experience and brand citizenship behavior, due to the lack of scale support that perfectly matches the subject connotation under this dimension, the researchers developed 5 items and 3 items according to the topic description to measure the two latent variables. Of course, in order to ensure the validity of the content, the researchers repeatedly revised the items according to the method of theoretical dimension construction, and finally obtained the initial measurement table.

4.2.3. Exploratory Factor

According to the data collected by the five-dimensional scale of the brand value, the reliability and validity test were first carried out, Cronbach's $\alpha = 0.896 > 0.8$ showed that the data had high reliability, $KMO = 0.744 (>0.5)$, $p < 0.001$, the χ^2 does not significantly reflect the structural validity of the questionnaire.

Next, EFA was performed on 21 measurement items of 5 dimensions, and the path coefficient was set to 1. The factor measurement was performed by the principal component method. This study attempted to extract five factors to assess whether each item could measure 5 latent variables better (see **Table 1**).

It can be seen from the factor extraction results that although there were two factors whose eigenvalues were less than 1, the eigenvalues were reasonable at a level above 0.8, and the five factors can explain the variance of 84.192% of all the items with strong explanatory power. At the same time, in the preliminary EFA results, two items (BEX5, BRQ4) were small in the path coefficient of each factor or there was no obvious difference between two or more factor loadings, then EFA was performed again after deleting the two items (see **Table 2**). Although some factor loadings were still not ideal, considering there were many sub-dimensions and measure items, the measure was at a load level of more than 0.6 and can be clearly distinguished from other factors, which was a relatively good result. So the measures of the five latent variables were more reasonable and further tested.

4.2.4. Confirmatory Factor Structure

The study conducted a CFA (confirmatory factor analysis) on the two sets of

Table 1. Brand value factor extraction results.

Ingredients	Initial eigenvalue			Extract square sum loading			Rotation square sumloading		
	Sum	Variance %	Accumulation %	Sum	Variance %	Accumulation %	Sum	Variance %	Accumulation %
1	13.100	62.383	62.383	13.100	62.383	62.383	5.978	28.466	28.466
2	1.590	7.571	69.954	1.590	7.571	69.954	3.595	17.121	45.587
3	1.194	5.685	75.639	1.194	5.685	75.639	3.120	14.858	60.445
4	0.964	4.593	80.232	0.964	4.593	80.232	2.795	13.308	73.752
5	0.832	3.960	84.192	0.832	3.960	84.192	2.192	10.440	84.192
6	0.595	2.833	87.025						
7	0.504	2.402	89.427						
8	0.399	1.901	91.327						
9	0.373	1.776	93.103						
10	0.327	1.556	94.660						
11	0.214	1.017	95.676						
12	0.197	0.938	96.615						
13	0.142	0.679	97.293						
14	0.117	0.559	97.852						
15	0.107	0.509	98.361						
16	0.099	0.472	98.832						
17	0.086	0.410	99.242						
18	0.070	0.335	99.577						
19	0.042	0.198	99.775						
20	0.030	0.143	99.918						
21	0.017	0.082	100.000						

measures by AMOS 21.0 to confirm whether the factor structure obtained by EFA was reasonable. The study created a two-dimensional model in AMOS and set the standard variable to point to the variance of the latent variable. After importing the data, the output selected the standardized estimates, loading and modification indices to load and other adaptation indicators. Judging the model fitting degree, if the model fitting was not ideal, the model was corrected by the correction index, and the latent variable CFA structure of five dimensions of brand value was shown in **Table 3**.

It can be seen from the results that the standardized estimates of the two latent variables pointing to their respective items are significant, and the loadings are above the level of 0.6, indicating that the factor structure of the latent variable is more obvious, and it is also verified that the scale has better structural validity. In terms of model fitting index, except for the statistic and sample size, the absolute fit index χ^2 is relatively large, and the RMSEA, SRMR and incremental fit index CFI are in a good fit range. In terms of the correction index, since the

Table 2. Brand value factor components.

	Ingredients				
	1	2	3	4	5
BK5	0.836	0.222	0.195	0.261	0.163
BK4	0.823	0.184	0.221	0.071	0.367
BK1	0.768	0.387	0.333	0.152	0.085
BK2	0.715	0.470	0.289	0.200	0.165
BK3	0.675	0.328	0.362	0.370	0.162
BEX3	0.425	0.738	0.260	0.081	0.264
BEX4	0.175	0.733	0.056	0.366	0.341
BEX2	0.570	0.664	0.213	0.158	0.047
BEX1	0.416	0.637	0.292	0.112	0.204
BES1	0.258	0.057	0.832	0.305	0.226
BES2	0.215	0.224	0.770	0.383	0.128
BES3	0.334	0.267	0.770	-0.003	0.033
BES4	0.270	0.403	0.719	0.265	0.127
BRQ1	0.079	0.107	0.216	0.896	0.090
BRQ2	0.368	0.475	0.094	0.638	0.132
BRQ3	0.437	0.215	0.302	0.605	0.179
BCB1	0.261	0.175	0.093	0.133	0.857
BCB2	0.231	0.362	0.281	0.165	0.676
BCB3	0.417	0.245	0.224	0.150	0.715

Table 3. Brand value dimension latent variable CFA results.

Item	Loading	t-Value	Fitting adaptation index
BEX1	0.791	5.834***	
BEX2	0.877	6.852***	$\chi^2 = 171, df = 142$
BEX3	0.916	7.367***	RMSEA = 0.065
BEX4	0.759	5.492***	CFI = 0.982
BK1	0.907	7.350***	SRMR = 0.053
BK2	0.927	7.630***	
BK3	0.911	7.405***	
BK4	0.873	6.887***	
BK5	0.887	7.073***	
BRQ1	0.664	4.497***	
BRQ2	0.800	5.812***	
BRQ3	0.899	6.914***	
BES1	0.679	4.741***	
BES2	0.678	4.724***	
BES3	0.662	4.582***	
BES4	0.909	7.246***	
BCB1	0.620	4.206***	
BCB2	0.702	4.933***	
BCB3	0.957	7.791***	

*** $p < 0.001$.

measurement items with more obvious deviations have been adjusted in the exploratory factor analysis, there is no more obvious correction item, so the structure of the latent variable factor is no longer adjusted.

4.3. Design, Subjects and Producer

The constructs of brand knowledge, brand relationship quality, and brand citizenship behavior refer to some scales and partial scale items which are translated, revised and tested [13] [54] [55], and refer some of the CBRQ scales developed by He Jiaxun [57]. The brand experience and brand citizenship behavior are based on the subject matter of the constructive theme [10], and every construct can be measured by at least 3 observed variables, which is in line with the paradigm of scientific research.

The sampling process is designed for users of Zhihu and Guokr, so the pre-screening items are set: "Whether can you use the Zhihu and Guokr" and "Which one do you use most often". The questionnaire is issued and recycled by directly sending out questionnaires to the above-mentioned users, and other online questionnaire distribution channels, and some offline methods. To encourage the surveyed group to fill out the questionnaire, the questionnaire sets a red envelope reward, and meantime to avoid interviewees to obtain red envelopes to operate repeatedly, the red envelope is set to be available only once for each IP and issued after review, to guarantee the authenticity of the data generated during the survey as much as possible.

Based on the grounded theory, the researcher concluded and constructed the theoretical construct of platform brand value according to more than 900 comments on 23 brands made by citizens on Baidu Koubai, and elaborated the logical relationship of its five dimensions. According to the five dimensions of brand value: brand experience, brand knowledge, brand relationship quality, brand citizenship behavior, brand esteem, here the author will construct a scale to measure the five dimensions and verify the results of the sub-dimensions to confirm the correctness of the sub-dimensions.

In the CFA operation, for research purposes, while following the academic norms of construct construction, in the study, "brand experience", "brand knowledge", "brand relationship quality", "brand citizenship behavior" and "brand esteem", which are treated as five one-dimensional single-order constructs, and cannot be abstracted to a higher-dimensional five-dimensional construct of brand value.

4.4. Measurement

We retained the five-dimensional scale of the brand value (Cronbach's $\alpha = 0.896$) from the pretest in the main study. In summary, the five dimensions and structural characteristics under the overall concept of brand value can be proved. In the main study, this research result is combined with the two first-order constructs under the overall concept of constructing the middle-class consumer value

in the theoretical dimension to explore such the formation process of platform brand value.

5. Results

5.1. Descriptive Statistics

A total of 371 questionnaires were distributed and collected. After deleting the results “Can you use the Zhihu/Guok?” there was still repeated IP. The author observed the answers of the same IP. If the results were basically the same, randomly to select one of the two or more answers as the answering result, and delete the others. If there were large inconsistencies in the multiple results of the same IP, all of them were rejected. So the remaining effective sample size was 269. According to the principle that the sample size should reach 5 - 10 times the number of items in the statistical analysis, the study determined that the sample size met this standard. The following results do not exist analysis error because of too small sample size.

Among all valid respondents, males account for 37.17% (100), females account for 62.83% (169), of which 86.62% (233) are aged 18 - 25, and 63.20% are students (170), although there are some differences in the characteristics of the population constructed in proportion to the theoretical dimension, the overall trend is basically the same as before, indicating that the previous statistical results have not changed too much due to the difference in the selected population, and at the same time the distribution characteristics of the crowd are more in line with the user of such websites in popular cognition.

5.2. Normal Distribution Test

The study intends to use CB-SEM to test the research hypothesis. Since the subsequent estimation of parameters uses maximum likelihood, it is first necessary to test whether the sample data meets the multivariate normal distribution assumption. The K-S test is carried out on every observed variable by SPSS. It was found that the significant values of the two sides of every observed variable were above 0.1, and the skewness and kurtosis level of each observed variable was investigated by descriptive statistics. Measurement results of two indices are close to 0, so it can be judged that the sample distribution has multi-variate normality.

Thereafter, in order to prevent the measurement results from being affected by the common method bias, the study uses the Harman single factor test to verify them. The results show that among the multiple factors extracted by exploratory factor analysis including all measure items, the first factor cannot explain most of the variation, so the impact of CMB on the measurement results is not significant.

5.3. Measurement Model Analysis

The empirical research also uses AMOS21.0 as a tool for structural equation

modeling. According to the research method proposed by the previous scholars, the analysis process will be divided into two steps. First, the five theoretical constructs will be fitted to the measurement model. If the fitting result is good, then structural model containing the causal path relationship will be tested [58].

In this process, the correlation coefficient between all constructs will be freely estimated. Since the measurement model containing five constructs has been tested separately in the theoretical dimension construction, the following test process is consistent with the previous test process in describing statistical characteristics except for sample size. If the before-after study is consistent with the presupposition of the previous test, that is, the interviewees' overall attitude towards various issues is basically the same, then we have reason to believe that the measurement model will present a better fitting result.

The following are the reliability test results and CFA results of the measurement models summarized and the model adaptation indicators. Firstly, the reliability indicators such as Cronbach's α , average variance extracted, and composite reliability indicate that the measurement results have high reliability; then to observe the model fitting situation, except the TLI is slightly lower than the ideal value of 0.95, other fitting adaptation indicators are within the acceptable range. Overall, the measurement model fits well and the structural model can be further tested.

Because the constructs in the research model are modeled after the theoretical constructs' reconstruction of Shen Lei *et al.* [10] and rooted achievements, it is not strictly an existing constructive construct, so it is necessary to test the discriminant validity between constructs by observing the correlation coefficient between constructs, gradually limiting the correlation coefficient between latent variables in the measurement model to 1 and observing $\Delta\chi^2$, and obtains the observation effect at a reasonable level. This process is not the core purpose of this study. To ensure the rigor of the academic research paradigm, it is mentioned here, and the detailed indicator levels are not repeated here (Table 4).

5.4. Structural Model Analysis

Similarly, before the model path analysis, the fitting fit index of the model is examined. Among them, $\chi^2 = 533.262$, $df = 303$, $p < 0.001$, the chi-square degree of freedom ratio is close to 2, but because this indicator is subject to the sample size, when the sample size is large, it is easy to make the judgment of excessive rejection of the null hypothesis. Therefore, it is necessary to comprehensively examine the information provided by other indicators, $RMSEA = 0.071$, $SRMR = 0.054$, all under the reasonable level of 0.08, $CFI = 0.960$, $TLI = 0.906$, which are in an acceptable range, where CFI is a fitting adaptation index that is minimally affected by the sample size, and a level close to 0.95 provides a higher persuasiveness. So in general, the structural model fits well.

The estimation of the path coefficient of the structural model is shown in the figure (see Figure 2). It can be seen from the figure that the brand experience has a positive effect on the formation of brand knowledge ($\beta_3 = 0.850$,

Table 4. Measurement model CFA results.

	Loading	Standard error	t-value
BEX (Cronbach's $\alpha = 0.893$ AVE = 0.7056 CR = 0.9051)			
BEX1	0.805	0.073	10.970***
BEX2	0.854	0.074	11.569***
BEX3	0.929	0.088	12.517***
BEX4	0.763	0.059	10.513***
BK (Cronbach's $\alpha = 0.955$ AVE = 0.8118 CR = 0.9557)			
BK1	0.902	0.070	12.266***
BK2	0.926	0.073	12.605***
BK3	0.914	0.072	12.430***
BK4	0.872	0.069	11.850***
BK5	0.890	0.071	12.084***
BRQ (Cronbach's $\alpha = 0.838$ AVE = 0.6272 CR = 0.8322)			
BRQ1	0.658	0.066	9.409***
BRQ2	0.782	0.088	10.502***
BRQ3	0.915	0.080	12.051***
BES (Cronbach's $\alpha = 0.872$ AVE = 0.5379 CR = 0.8197)			
BES1	0.675	0.068	9.642***
BES2	0.655	0.067	9.438***
BES3	0.650	0.070	9.407***
BES4	0.919	0.082	12.451***
BCB (Cronbach's $\alpha = 0.842$ AVE = 0.6108 CR = 0.8220)			
BCB1	0.659	0.082	9.393***
BCB2	0.744	0.074	10.165***
BCB3	0.919	0.069	12.158***
Model fit	$\chi^2 = 533.262$ (df = 303, $p < 0.001$), $\chi^2/df = 1.760$, CFI = 0.960, TLI = 0.906, RMSEA = 0.071, SRMR = 0.054		

*** $p < 0.001$.

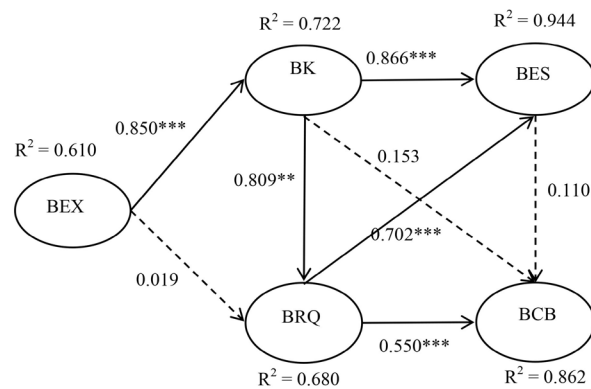


Figure 2. Structural model estimation result (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$).

$p < 0.001$), but its effect on the quality of brand relationship is not significant ($\beta_4 = 0.019, p > 0.05$), therefore, H1 is supported, H2 is negated; brand knowledge can promote the formation of brand relationship quality ($\beta_5 = 0.809, p < 0.01$), H3 is verified; brand knowledge can promote the generation of brand esteem ($\beta_6 = 0.866, p < 0.001$), but can not directly promote to produce brand citizenship behavior ($\beta_7 = 0.153, p > 0.05$), and brand relationship quality has a significant effect on brand esteem and brand citizenship behavior ($\beta_8 = 0.702, p < 0.001$; $\beta_9 = 0.550, p < 0.01$), H4, H6, H7 are established, H5 is negated; brand esteem have no significant effect on the generation of brand citizenship behavior ($\beta_{10} = 0.110, p > 0.05$), and H8 is negated.

5.5. Result and Principle Analysis

Most of the eight hypotheses proposed at the beginning of the study were confirmed by structural model test, and the overall path relationship was also basically in line with the theoretical support and initial assumptions. Here the study will interpret the results of the structural model analysis and reveal the relationship between phenomena represented by the path relationship, and for assumptions not supported by data, a reasonable explanation will be given.

First, according to the previous research results of Shen Lei *et al.* [10], the value of the prosumer derives from the interaction of four external dependent variables, and the brand value generated by the value of the producer is the brand's subsequent extension and an important basis for end-users to generate payment intention, so the core of prosumers value to promote the formation of brand value is the problem that all the hypotheses in this study attempt to explain. When the prosumers obtain a good experience of using a platform on a continuous or long-term basis, they will have a desire to further understand the brand. With the in-depth understanding of the brand, the prosumers gradually form brand knowledge; in the process of brand knowledge formation, as the brand image in the consumer's mind is more clearly portrayed, it will increasingly determine the way in which the prosumers and the brand are linked, that is, the brand knowledge is positively affecting brand relationship quality. Then the brand experience indirectly affects brand relationship quality through brand knowledge; the continuous construction of brand knowledge will prompt the prosumers to be more loyal to the brand, to generate the ideological activities and explicit behaviors that praise and even attach to this brand. Similarly, this result will also be driven by an increasingly defined relationship with brand, that is, the behavior of the prosumers is not limited to using and recommending others to use this platform, and it will also promote the change of individual behavior or multiple behavioral aspects, resulting in a unique relationship links of "Citizenship" behavior with this platform.

The above is a reasonable interpretation of the measurement results, but at the same time there are three differences between the research results and the expected ones. First, with prosumers as main body, in the course of interaction between brand stakeholders and brands, only through a series of sensory, emo-

tional, thinking, behavioral and social experiences, it is difficult to establish a continuous emotional connection with the brand. Second, brand knowledge does not significantly affect brand citizenship behavior, which can be understood as brand knowledge has not reached a high enough level to promote behavior beyond the brand, only with a unique understanding of brand, taking initiatives to maintain the brand image and even make altruistic behaviors may be too harsh for prosumers. Third, brand esteem can't directly stimulate brand citizenship behavior. This phenomenon can be interpreted that when prosumers maintain brand loyalty and act accordingly, the subconsciously has made their own judgment about what should be done under this psychological motivation. The promotion and loyalty to the brand can not directly inspire higher level of behavior, but in order to motivate prosumers' higher dimensional behavior, which needs the support of stronger psychological motivation.

6. General Discussion

Though many scholars and practitioners show great interest in brand value [14] [15] and measures, surprisingly little research has investigated the underlying influencing mechanism. What are the logical relationships between the dimensions? That is, how these dimensions (brand experience, brand knowledge, brand relationship quality, brand citizenship behavior and brand esteem) interact? This issue is not fully understood. Furthermore, previous studies have offered little guidance on how brand value should be designed for maximum positive impact on prosumers. In addressing this gap, the research provides new empirical evidence that supports the operationalization of brand value as a valid construct with five valid dimensions (*i.e.* brand experience, brand knowledge, brand relationship quality, brand citizenship behavior and brand esteem). What's more, a series of tests demonstrate strong reliability and construct validity, and confirm the hypothesized positioning of brand value relative to prosumers based on platform enterprises, thus, sanctioning the underlying interaction mechanism between dimensions of brand value.

6.1. Brand Value

The brand value studied in this paper is different from the description of brand value in classical research. Based on the brand value under the logic of presumption of Yadav and Pavlou [24], Yi and Gong [25], Shen Lei *et al.* [48], the first order constructs of the five dimensions are tested and measured respectively.

Under the framework of refactoring brand value, it includes the description and summary of the five dimensions of brand experience, brand knowledge, brand relationship quality, brand esteem and brand citizenship behavior, and which is different from the previous understanding of the brand. The relationship between the value dimensions has an interactive relationship under the presumption logic, from the experience level to the relationship level to the behavior level, which presents the progressive relation level by level. With the advent of the era of presumption, the reconstruction and verification results of the

concept also illustrate the brand value is constantly evolving in the concept and connotation. And prosumers with both production and consumption attributes play an increasingly important role in the process, and continue to promote the transformation of brand value shaping behavior from the initial feeling and cognitive evolution to the high-level behavioral dimension.

6.2. Brand Value Formation Mechanism

Through the behavior of the prosumers' loyalty and maintenance, which are generated by their initial perception of the content of the information and ending with the explicit display. So it is a hierarchy of interlocking formation of brand value. The prosumer is both the original creator of value and the ultimate user and beneficiary. Prosumers show complex cognitive beliefs and behaviors in each link which are different from other links, which determines that prosumers almost dominate the whole process of brand value shaping. The role of platforms in this process is closer to that of media and carriers and providers of other services. Just like the brand user funnel model, the process of low-level perception to high-level behavior has undergone a process of layer-by-layer screening, but this screening process is completed by the user based on his own judgment. The platform provides the basis of judgment and screening, but the process can not help the users to judge, nor can it lead the process.

7. Contributions

While the findings of this study have served to provide fruitful discussion relating to the brand value and interaction mechanism between dimensions and the nomological network within which it resides, it is important to explicate the study's contributions from both theory and practice.

7.1. Theoretical Contributions

The current study makes two primary contributions to the research of brand value and interaction mechanism between its dimensions. First, most of the previous research on human in marketing has focused on the cause and effect of behaviors or the study of humans in general terms as users or consumers. The current study investigated the meaning reflected by the production attribute and consumption attribute behind prosumers, that plays an important role in perception of the content value and its production and dissemination, which is the core starting point of Internet user behavior.

Furthermore, though different scholars have varied definitions and research focuses about brand value, the sub-dimension of brand value is by no means parallel. The current study also extends the theories associated with the dimensions by including the five first order constructs of brand value in order to establish strong hypotheses. This study explored the interaction between the five dimensions of brand value based on platform enterprises. We provided findings regarding the influence of interaction mechanism of brand value on prosumers

with great academic support.

7.2. Practical Contributions

The current study has several important practical implications for platform enterprises and marketers. First, this current research is based on the environment of Internet consumption or Web 2.0, from the perspective of prosumption, to explore the path relationship of brand value formation of platform enterprises. That is where the brand value of platform enterprises comes from, what intermediate links it acts on, what specific representation it has, and what comprehensive utility it will eventually produce. With the emergence of various forms of marketing, prosumers plays an important role in building brand value. Therefore this current research contributes to explore the source of brand value in business environment, and marketers should take advantage of the situation by effectively using interaction relationship between BEX, BK, BRQ, BES, BCB, thereby enhancing prosumers message acceptance and strengthening their positive brand attitudes.

Furthermore, this study also suggests that there is a need to pay attention to the core link of the whole logic from the shaping of prosumers value to the extension of brand value. Through the prosumers value to build brand value, this study supplies commercial management practice some enlightenment from the micro level. In order to build the brand value of platform enterprises, it is necessary to ensure the diversity and quality of content. Just like a restaurant to attract and retain customers, good quality of the food is indispensable, but from the research we find that is not enough. The user's perception of the value of content availability and reuse and dissemination is another concern, which largely determines whether the user will be interested in the brand and the point of interest. Only from the user's perception of the brand and positioning, it is possible to establish long-term positive emotional connection with users and stimulate their behaviors under the support of the strong faith dimension.

To be specific, the results of this study will help platform enterprises and practitioners based on social media to formulate a better strategy to develop their sharing platforms to improve brand value. What's more, after understanding the logic relationship between the brand experience, brand knowledge, brand relationship quality, brand citizenship behavior and brand esteem, practitioners and marketers can design trustworthy and hassle-free digitalized sharing platforms. Finally, through building rigorous and trustworthy brand value process, business enterprises may gain more competitive advantage and expand sale volume thus to increase the revenue.

8. Limitations and Future Research

There are inevitable limitations in the study. The limitations and shortcomings of this study will be discussed below, as well as what kind of research extensions or deeper discussions on the research hypotheses and more detailed description

of the literature review process can be made.

First of all, as mentioned above, this study is to maintain the continuity of Shen Lei *et al.* [10], and to make up for the gap on the basis of continuation, the selected research objects are still Zhihu and Guokr, the knowledge-sharing social networking sites represented by the two, although the advantage of this is that on the one hand, this study uses the data of the current time node to verify and supplement the previous results, which can increase the credibility with each other. On the other hand, it grasps the key points in the previous research to discuss and supplement it from the micro level. But because of this, the research also limits the horizontal width to this level, and cannot be carried out in terms of art, food and even energy. The microscopic research to the broader phenomenon of sharing economy also has many topics to discuss.

Secondly, it is also caused by the research object. The knowledge sharing social networking sites are typical and almost do not involve the platform of physical and commodity trading. Therefore, the author's conjecture mentioned in the article, that is, the prosumers' value should include exchange value or transaction value, although this value is obvious from the perspective of public cognition; the unconfirmed conclusion is not rigorous in the academic research results, so this requires the latter verify this value dimension.

Finally, the research viewpoints and conclusions of this paper have a very strong contextualized color. The typical representative of knowledge sharing social networking sites in China is Zhihu and Guokr. Therefore, there is no problem in applying the research conclusions to China, but under a broader cultural background, due to differences in cultural backgrounds and in branding of research subjects, whether this research can be replicated cannot be prematurely concluded. Similarly, the micro level discussion in this study is still of in-depth research significance in a broader cultural context.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Keller, K.L. and Lehmann, D.R. (2006) Brands and Branding: Research Findings and Future Priorities. *Marketing Science*, **25**, 740-759. <https://doi.org/10.1287/mksc.1050.0153>
- [2] Atilgan, E., Aksoy, S. and Akinci, S. (2005) Determinants of the Brand Equity: A Verification Approach in the Beverage Industry in Turkey. *Marketing Intelligence and Planning*, **23**, 237-248. <https://doi.org/10.1108/02634500510597283>
- [3] Vargo, S.L. and Lusch, R.F. (2004) Evolving to a New Dominant Logic for Marketing. *Journal of Marketing*, **68**, 1-17. <https://doi.org/10.1509/jmkg.68.1.1.24036>
- [4] Ramaswamy, V. and Ozcan, K. (2018) Offerings as Digitalized Interactive Platforms: A Conceptual Framework and Implications. *Journal of Marketing*, **82**, 19-31. <https://doi.org/10.1509/jm.15.0365>

- [5] Chenhall, R.H. and Langfield-Smith, K. (2007) Multiple Perspectives of Performance Measures. *European Management Journal*, **25**, 266-282. <https://doi.org/10.1016/j.emj.2007.06.001>
- [6] Valette-Florence, P., Guizani, H. and Merunka, D. (2011) The Impact of Brand Personality and Sales Promotions on Brand Equity. *Journal of Business Research*, **64**, 24-28. <https://doi.org/10.1016/j.jbusres.2009.09.015>
- [7] Christodoulides, G. and Chernatony, L. (2010) Consumer-Based Brand Equity Conceptualisation and Measurement: A Literature Review. *International Journal of Market Research*, **52**, 43-66. <https://doi.org/10.2501/S1470785310201053>
- [8] Buil, I., Chernatony, L. and Martínez, E. (2013) Examining the Role of Advertising and Sales Promotions in Brand Equity Creation. *Journal of Business Research*, **66**, 115-122. <https://doi.org/10.1016/j.jbusres.2011.07.030>
- [9] Huang, Z. and Cai, L.A. (2015) Modeling Consumer-Based Brand Equity for Multinational Hotel Brands: When Hosts Become Guests. *Tourism Management*, **46**, 431-443. <https://doi.org/10.1016/j.tourman.2014.07.013>
- [10] Shen, L., Zheng, Z.Y. and Wei, X.Y. (2019) *Unlocking the Password of the Sharing Economy: Prosumption Logic*. China Book Publishing House, Beijing.
- [11] Yoo, B., Donthu, N. and Lee, S. (2000) An Examination of Selected Marketing Mix Elements and Brand Equity. *Journal of the Academy of Marketing Science*, **28**, 195-211. <https://doi.org/10.1177/0092070300282002>
- [12] Cobb-Walgren, C., Ruble, C. and Donthu, N. (1995) Brand Equity, Brand Preference, and Purchase Intent. *Journal of Advertising*, **24**, 25-40. <https://doi.org/10.1080/00913367.1995.10673481>
- [13] Aaker, D.A. (1996) Measuring Brand Equity across Products and Markets. *California Management Review*, **38**, 102-120. <https://doi.org/10.2307/41165845>
- [14] Aaker, D.A. (1991) *Managing Brand Equity*. Free Press, New York.
- [15] Keller, K.L. (1993) Conceptualizing, Measuring, and Managing Customer-Based Brand Equity. *Journal of Marketing*, **57**, 1-22. <https://doi.org/10.1177/002224299305700101>
- [16] Keller, K.L. and Lehmann, D.R. (2003) How Do Brands Create Value? *Marketing Management*, **12**, 26-31.
- [17] Kumar, V., Aksoy, L., Donkers, B., Venkatesan, R., Wiesel, T. and Tillmanns, S. (2010) Undervalued or Overvalued Customers: Capturing Total Customer Engagement Value. *Journal of Service Research*, **13**, 297-310. <https://doi.org/10.1177/1094670510375602>
- [18] Barwise, P. (1993) Brand Equity: Snark or Boojum? *International Journal of Research in Marketing*, **10**, 93-104. [https://doi.org/10.1016/0167-8116\(93\)90036-X](https://doi.org/10.1016/0167-8116(93)90036-X)
- [19] Ge, J., Xu, H. and Pellegrini, M.M. (2019) The Effect of Value Co-Creation on Social Enterprise Growth: Moderating Mechanism of Environment Dynamics. *Sustainability*, **11**, 250. <https://doi.org/10.3390/su11010250>
- [20] Kumar, V. and Anita, P. (2016) Competitive Advantage through Engagement. *Journal of Marketing*, **23**, 497-514. <https://doi.org/10.1509/jmr.15.0044>
- [21] Grönroos, C. (2013) Critical Service Logic: Making Sense of Value Creation and Co-Creation. *Journal of the Academy of Marketing Science*, **41**, 133-150. <https://doi.org/10.1007/s11747-012-0308-3>
- [22] Vargo, S.L. and Lusch, R.F. (2017) Service-Dominant Logic 2025. *International Journal of Research in Marketing*, **34**, 46-67. <https://doi.org/10.1016/j.ijresmar.2016.11.001>

- [23] Ramaswamy, V. and Ozcan, K. (2014) *The Co-Creation Paradigm*, Stanford Business Books. An Imprint of Stanford University Press, Stanford.
- [24] Yadav, M.S. and Pavlou, P.A. (2014) Marketing in Computer-Mediated Environments: Research Synthesis and New Directions. *Journal of Marketing*, **78**, 20-40. <https://doi.org/10.1509/jm.12.0020>
- [25] Yi, Y. and Gong, T. (2013) Customer Value Co-Creation Behavior: Scale Development and Validation. *Journal of Business Research*, **66**, 1279-1284. <https://doi.org/10.1016/j.jbusres.2012.02.026>
- [26] Shen, L. and Wei, X.Y. (2016) Prosumption Activities in the Sharing Economy: Research Review and Direction. *Creative Economy and Management*, No. 1, 18-25.
- [27] Ritzer, G. and Jurgenson, N. (2010) Production, Consumption, Prosumption: The Nature of Capitalism in the Age of the Digital Prosumer. *Journal of Consumer Culture*, **10**, 13-36. <https://doi.org/10.1177/1469540509354673>
- [28] Ballantyne, D., Frow, P., Varey, R.J. and Payne, A. (2011) Value Propositions as Communication Practice: Taking a Wider View. *Industrial Marketing Management*, **40**, 202-210. <https://doi.org/10.1016/j.indmarman.2010.06.032>
- [29] Vargo, S.L. and Lusch, R.F. (2008) From Goods to Service(s): Divergences and Convergences of Logics. *Industrial Marketing Management*, **37**, 254-259. <https://doi.org/10.1016/j.indmarman.2007.07.004>
- [30] Merz, M.A., He, Y. and Vargo, S.L. (2009) The Evolving Brand Logic: A Service Dominant Logic Perspective. *Journal of the Academy of Marketing Science*, **37**, 328-344. <https://doi.org/10.1007/s11747-009-0143-3>
- [31] Fournier, S. and Avery, J. (2011) The Uninvited Brand. *Business Horizons*, **54**, 193-207. <https://doi.org/10.1016/j.bushor.2011.01.001>
- [32] Aaker, D.A. (2012) *Building Strong Brands*. Simon & Schuster, New York.
- [33] Keller, K.L. (2016) Reflections on Customer-Based Brand Equity: Perspectives, Progress, and Priorities. *AMS Review*, **6**, 1-16. <https://doi.org/10.1007/s13162-016-0078-z>
- [34] Porter, M.E. (2001) The Value Chain and Competitive Advantage. *Understanding Business Processes*, 50-66.
- [35] Xie, C., Bagozzi, R.P. and Troye, S.V. (2008) Trying to Prosume: Toward a Theory of Consumers as Co-Creators of Value. *Journal of the Academy of Marketing Science*, **36**, 109-122. <https://doi.org/10.1007/s11747-007-0060-2>
- [36] Pietrykowski, B. (2007) Exploring New Directions for Research in the Radical Political Economy of Consumption. *Review of Radical Political Economics*, **39**, 257-283. <https://doi.org/10.1177/0486613407302487>
- [37] Toffler, A. and Alvin, T. (1981) *The Third Wave*. Bantam Books, New York.
- [38] Tapscott, D. and Williams, A.D. (2007) *Wikinomics*. China Youth Publishing House, Beijing.
- [39] Seran, S. and Izvercian, M. (2014) Prosumer Engagement in Innovation Strategies: The Prosumer Creativity and Focus Model. *Management Decision*, **52**, 1968-1980. <https://doi.org/10.1108/MD-06-2013-0347>
- [40] Ritzer, G. (2014) Prosumption: Evolution, Revolution, or Eternal Return of the Same? *Journal of Consumer Culture*, **14**, 3-24. <https://doi.org/10.1177/1469540513509641>
- [41] Prahalad, C.K. and Ramaswamy, V. (2004) Co-Creating Unique Value with Customers. *Strategy & Leadership*, **32**, 4-9. <https://doi.org/10.1108/10878570410699249>
- [42] Wilden, R., Akaka, M.A., Karpen, I.O. and Hohberger, J. (2017) The Evolution and

- Prospects of Service-Dominant Logic: An Investigation of Past, Present, and Future Research. *Journal of Service Research*, **20**, 345-361.
<https://doi.org/10.1177/1094670517715121>
- [43] Izvercian, M. and Potra, S.A. (2014) Prosumer-Oriented Relationship Management Capability Development for Business Performance. *Procedia Technology*, **16**, 606-612.
<https://doi.org/10.1016/j.protcy.2014.10.009>
- [44] Rayna, T. and Striukova, L. (2016) Involving Consumers: The Role of Digital Technologies in Promoting “Prosumption” and User Innovation. *Journal of the Knowledge Economy*, 1-20. <https://doi.org/10.1007/s13132-016-0390-8>
- [45] Billows, G. and McNeill, L. (2018) Consumer Attitude and Behavioral Intention toward Collaborative Consumption of Shared Services. *Sustainability*, **10**, 4468.
<https://doi.org/10.3390/su10124468>
- [46] Botsman, R. and Rogers, R. (2010) Beyond Zipcar: Collaborative Consumption. *Harvard Business Review*.
- [47] Hamari, J., Sjöklint, M., Ukkonen, A., Sjöklint, M. and Ukkonen, A. (2016) The Sharing Economy: Why People Participate in Collaborative Consumption. *Journal of the Association for Information Science and Technology*, **67**, 2047-2059.
<https://doi.org/10.1002/asi.23552>
- [48] Shen, L., Zheng, Z.Y. and Zhang, Y. (2019) Web 2.0 Prosumption: Essence and the Value Logic. *Forecast*, No. 3, 91-96.
- [49] Schumacker, R.E. and Lomax, R.G. (1996) *A Beginner’s Guide to Structural Equation Modelling*. Lawrence Erlbaum Associates, Mahwah.
- [50] Zeithaml, V.A. (1988) Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing*, **52**, 2-22.
<https://doi.org/10.1177/002224298805200302>
- [51] Wei, X.Y. (2016) *The Formation Mechanism of Brand Value of Knowledge Sharing Social Networking Sites: The Role of Productive Information Consumption*. Donghua University, Shanghai.
- [52] Sheth, J.N. and Uslay, C. (2007) Implications of the Revised Definition of Marketing: From Exchange to Value Creation. *Journal of Public Policy & Marketing*, **26**, 302-307. <https://doi.org/10.1509/jppm.26.2.302>
- [53] Aaker, J. (1997) Dimensions of Brand Personality. *Journal of Marketing Research*, **34**, 347-356. <https://doi.org/10.1177/002224379703400304>
- [54] Thomson, M., MacInnis, D.J. and Park, C.W. (2005) The Ties That Bind: Measuring the Strength of Consumers’ Emotional Attachments to Brands. *Journal of Consumer Psychology*, **15**, 77-91. https://doi.org/10.1207/s15327663jcp1501_10
- [55] Yoo, B. and Donthu, N. (2001) Developing and Validating a Multidimensional Consumer-Based Brand Equity Scale. *Journal of Business Research*, **52**, 1-14.
[https://doi.org/10.1016/S0148-2963\(99\)00098-3](https://doi.org/10.1016/S0148-2963(99)00098-3)
- [56] He, J.X. (2006) A Review of Social Psychology Perspectives on Brand Equity Measurement. *Foreign Economics and Management*, **28**, 48-52.
- [57] He, J.X. (2006) Differences in Brand Equity between Chinese and Foreign Enterprises and Management Suggestions—An Empirical Study Based on CBRQ Scale. *China Industrial Economy*, No. 8, 109-116.
- [58] Anderson, J.C. and Gerbing, D.W. (1988) Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin*, **103**, 411-423. <https://doi.org/10.1037/0033-2909.103.3.411>

Appendix

Table A1. Variables used to measure the constructs.

Constructs	Items
Brand experience (BEX)	<ol style="list-style-type: none"> 1) Zhihu/Guokr gives me a good intuitive sensory experience 2) Zhihu/Guokr gives me a good emotional experience 3) Zhihu/Guokr gives me a good thinking experience 4) The interactive behavior of browsing or asking questions on Zhihu/Guokr makes me very good 5) Zhihu/Guokr gives me a very good social experience*
Brand knowledge (BK)	<ol style="list-style-type: none"> 1) I can think of some characteristics of Zhihu/Guokr very quickly 2) I can think of symbol or mark of Zhihu/Guokr very quickly 3) Zhihu/Guokr content quality is very high 4) When I use Zhihu/Guokr, I think the cost (time, experience, even money) is worthwhile 5) love Zhihu/Guokr platform
Brand relationship quality (BRQ)	<ol style="list-style-type: none"> 1) I am very satisfied with Zhihu/Guokr 2) Zhihu/Guokr is trustworthy 3) I have a strong dependence on Zhihu/Guokr 4) Even though my life has changed, I still use
Zhihu/Guokr* Brand esteem (BES)	<ol style="list-style-type: none"> 1) If I can use Zhihu/Guokr, I will not use other similar platforms 2) I have a strong attachment to Zhihu/Guokr 3) I have a good opinion of Zhihu/Guokr users and even worship them 4) I will tell my friends about the disadvantages of other platform
Brand citizenship behavior (BCB)	<ol style="list-style-type: none"> 1) I'd like to help other Zhihu/Guokr users or answer their questions 2) I support Zhihu/Guokr community 3) I'd like to help Zhihu/Guokr become better

Notes: Likert 7 scale is used for all items; the items marked with * are deleted after verification in construct construction and not used in empirical research.