

Article

The Effect of Value Creation on Startups Performance in the Digital Environment: Evidence from Chinese Digital Startups

Ping Chen

School of Business, Renmin University of China, Beijing 100872, China; rucchenping@ruc.edu.cn;
Tel.: +86-188-1030-4708

Abstract: The use of digital technology has enabled consumers to play an essential role in the success of startups. Priem et al. proposed a demand-value creation-performance framework, which argues that firms can create value for the consumer by exploring consumer demand, and this type of value-creation activity can help firms gain better performance. However, empirical evidence supporting this framework remains scarce. To address this challenge, this study empirically tests Priem et al.'s framework in the context of entrepreneurship. A unique on-site survey dataset of 323 digital startups in the digital environment was employed to explore how consumer demand drives startups to value creation activities and gain better performance. The study results show that consumer demands, in terms of demand heterogeneity, demand uncertainty, and demand interactivity, are positively related to value creation, as reflected by opportunity recognition and consumer innovation. Furthermore, both opportunity recognition and consumer innovation are positively related to the performance of startups. These findings support the demand-side perspective by providing empirical evidence for its key arguments from an entrepreneurial view and extend the demand-side perspective by contextualizing it in the increasingly digital environment.

Keywords: demand-side perspective; opportunity recognition; consumer innovation; value creation; digital environment



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1. Introduction

In the contemporary digital landscape, the adoption of innovative digital technologies has empowered consumers to assume a pivotal role in the business environment [1–4]. Since the 1990s, strategic management research has widely embraced the supply-side perspective, which posits that a focal firm's competitive advantage is contingent on its ability to possess and manage a diverse set of heterogeneous resources or capabilities, all other factors being equal [5–9]. While previous research has placed considerable emphasis on value creation, these streams of inquiry have also highlighted the significance of value capture activities, which enable a firm to exclude its competitors from lucrative opportunities. More recently, researchers have come to recognize the importance of attending to the demand side of the equation, given that consumers serve as ultimate arbiters of value [8–11]. Notably, the demand-side perspective (DSP) has gained increasing traction and is currently permeating various fields, including strategic management [12,13], international business [14,15], supply chain management [16], and business models [17–19].

Professor Richard L. Priem and his colleagues have significantly contributed to the DSP field [16,17,20,21]. In their seminal work, Priem et al. [22] proposed a demand-value creation-performance framework of DSP which elucidates how consumer demand influences firm performance through value-creation initiatives. Specifically, by shifting the focus from the focal firm to product markets and consumers, the DSP suggests that the heterogeneity of consumers and dynamic changes in consumer preferences largely dictate a firm's managerial decisions regarding value creation in a value system, thus resulting in performance disparities.

Despite that, the development of DSP is still in its infancy. First, few studies provide an empirical test for the core tenet of DSP, namely, the demand-value creation-performance framework. Although the DSP, as a promising perspective, is increasingly introduced to multiple research fields, it is far from mature because its key arguments are mainly waiting to be tested. In particular, entrepreneurship is believed to be a critical sphere of influence of the DSP [18], and the user plays an essential role in digital startups [23–25]. Still, the current literature has little idea of how helpful the DSP is for entrepreneurship research, especially in the digital environment. Considering that rigorous empirical test is critical for theory development in that it brings theory to real life [26], this study endeavors to enrich the DSP by offering a formal empirical test for its key arguments from an entrepreneurial view.

Second, the development of the DSP requires extensive contextualization. Contextualization is essential for theory development; it can help improve the predictive power of a theory [26]. The DSP emphasizes the role of demand heterogeneity and demand uncertainty in determining value creation [22]. Intuitively, it would be valuable to contextualize it in environments where demand heterogeneity and uncertainty are salient. In this study, the author argues that the digital economy represents such a perfect context [18,19,27]. In recent years, digital innovation is profoundly reshaping the way of doing business [28]. The development of new digital technologies makes power sources shift significantly from marketers to consumers [29].

Furthermore, in an increasingly digital world, businesses become less bounded and predefined [23], making the business environment highly open [30,31], uncertain [23], and interconnected [32,33]. Particularly, advances in new digital technologies and the burst of the digital economy enable consumers to instantly and frequently deliver their needs to firms through dynamic interactions [25,34]. Thus, this study argues that the digital economy is ideal for testing and extending the DSP.

This study aims to test and extend the core tenet of the DSP in an increasingly digital environment. Drawing on the insights of Priem et al.'s seminal work [22], this study examines how consumer demand drives value creation and consequently contributes to the performance of startups. A survey dataset of 323 digital startups in the digital environment was employed to explore the relationship between consumer demand and value creation. The empirical results show that demand heterogeneity, demand uncertainty, and demand interactivity are all positively related to value creation, as reflected by opportunity recognition and consumer innovation. Furthermore, both opportunity recognition and consumer innovation are positively related to the performance of startups. This study thus contributes to the DSP in two significant ways. First, the findings provide empirical evidence for the DSP from an entrepreneurial view. To the best of the author's knowledge, this paper is the first to provide a formal empirical test for Priem et al.'s [22] framework in the entrepreneurship field. Second, this study extends the DSP to the context of the digital environment, providing additional evidence for the DSP by showing how it explains the value creation of startups in the digital environment.

2. Theoretical Background

Prior research often takes a supply-side perspective and focuses primarily on the firm's value capture activities through which they could exclude their rivals from opportunities. The resource/capability-based approach is widely adopted in strategic management research, which argues that the possession and management of resources or capability can lead to a focal firm's competitive advantage, all else being equal [5–9]. For example, Peljko and Auer [35] investigated how entrepreneurial curiosity affects innovation, and Sánchez-García et al. [36] proved the effect of entrepreneurial orientation on innovation and startup sustainability, which are researched from the supply side. Despite its significant contributions, the resource-based view (RBV)-related research takes it for granted that value has been created and underlines value capture by neglecting that value and opportunities come first from the demand side [37,38].

Recently, there has been a growing recognition that research should pay attention to value creation from the demand side [11,16,20]. In particular, Priem et al. [22] argued that “demand-side strategy research instead typically looks externally and downstream from the focal firm, toward product markets and consumers, to explain and predict those managerial decisions that increase value creation within a value system.” Ever since then, Richard L. Priem and other DSP supporters have committed themselves to introduce the DSP to multiple fields such as strategic management [12,13,39–41], international business [12,16], supply chain management [10], and business model research [17,18,21].

According to the seminal work of Priem et al. [22], the critical thoughts of the DSP are listed below. First, DSP emphasizes the consumer’s role in determining the value system’s total value and the consumer’s heterogeneity in evaluating a given product or service. DSP views the market as a value system [42], where firms create value for consumers through providing products or services, and consumers make payment depending on their judgment of the value of the products or services [20,22]. The judgments of consumers are subjective and individual-specific [20,43]. These lead to the critical assumption of DSP; consumers are heterogeneous, and their preferences are changing dynamically [21]. Specifically, *demand heterogeneity* indicates that the market a firm faces is multidimensional; it has many different segments, and the needs of consumers in each segment are different [20,44,45]. In addition, *demand uncertainty* indicates that consumer demands and preferences change dynamically over time, and sometimes it is hard to predict how they will change [20,44].

Second, DSP emphasizes value creation instead of value capture and argues that firms can improve their performance by increasing consumer benefits. By distinguishing value capture from value creation, the DSP proposes that in a value system [36], “value creation is determined by consumers’ evaluations of benefit they expect to receive from a purchase, indicated by willing to pay” and “value capture is determined by structure and resource ownership in a value system” [20].

Third, firms can create consumer value by exploiting demand heterogeneity and uncertainty. Since consumers’ judgments of products or services are heterogeneous and dynamic, unsatisfied needs exist in the market [20]. Firms can exploit these unsatisfied needs through appropriate innovation [46], and improve performance by increasing consumer benefit [20,43]. From an entrepreneurial view, two key value-creation activities exist. First, demand heterogeneity and uncertainty contribute to opportunity recognition through opportunity signaling [22]. Second, demand heterogeneity and uncertainty lead startups to innovate with their consumers [22,47].

Based on these, Priem et al. proposed a demand-value creation-performance framework that argues that firms can create value for the consumer by exploring consumer demand, and this type of value-creation activity can help firms gain better performance. Scholars focus more on consumer demand’s role in innovation and entrepreneurship. von Hippel and Kaulartz [48] argued that the consumer is the key driver of innovation. By exploring the relationship between business model design diversification and performance, Sohl et al. [49] found that user heterogeneity would reinforce the positive relationship between business model design diversification and performance. Zhang et al. [50] found that global demand heterogeneity provides pressure and opportunities for multinational firms to learn and adapt and is positively related to the development of dynamic capabilities of multinational firms. Wang et al. [11] discovered that past user relationships become a double-edged sword when demand-side preferences for a particular technology change, with different impacts on different types of adaptive capabilities of firms different impacts. While the value of DSP has been increasingly recognized, there is still plenty of room for improvement. A very first concern is: does Priem et al.’s framework work? From an emerging perspective, the core tenet of the DSP is mainly waiting to be verified. Opinions are divided on this aspect. For example, Levitas [51] points out three limitations of Priem et al.’s [22] framework: (1) success in consumer markets does not equal firm success; (2) the notion of ‘value’ used in the framework is not clear; (3) consumer preferences are endogenous. Although the insight of DSP is being introduced to multiple research fields, studies in

each field remain scarce. More than surprise, our literature review shows that the DSP remains the least adopted by entrepreneurship scholars up to now. Since entrepreneurship is the pursuit of opportunity without regard to resources currently controlled [52], both opportunity recognition and innovation are at the heart of entrepreneurship [53,54]. The DSP seems particularly valuable for entrepreneurship research [22]. Thus, it becomes indispensable to test the insights of DSP from an entrepreneurial view.

Another issue is whether Priem et al.'s framework is applicable in all contexts. The author posits that to enhance the generalizability of the DSP, considerable effort must be devoted to contextualizing it. Context is an integral component of the theory. Firstly, it not only delineates the boundaries of a theory [55] but also shapes the propositions of a theory [56]. Secondly, contextualization can significantly augment the predictive power of a theory [26]. Therefore, it is essential to evaluate the DSP by contextualizing it in various ways. This study proposes that the digital economy is a proper context for testing and further developing the DSP. On the one hand, consumer demand becomes even more heterogeneous and unpredictable in the digital realm [18,27]. Furthermore, the proliferation of various digital technologies facilitates direct, frequent, and profound interactions between firms and their consumers [32,33,57]. On the other hand, the integration of new digital technologies creates novel ways of value creation. Firstly, digital innovation provides startups with access to abundant entrepreneurial opportunities [17,58]. Secondly, digitization allows consumers to participate in firm innovation [59] and enables startups to empower their consumers more effectively [60]. Thus, the author is curious about how the DSP will function in an increasingly digital business environment.

3. Hypothesis Development

Positioning in the new digital environment, this study endeavors to test Priem, Li, and Carr's [22] DSP framework from an entrepreneurial view. Specifically, the author explores how consumer demand impacts a startup's value-creation activities, which consequently determine the performance of startups (Figure 1). Following previous studies on the DSP [11,14,20], and taking the digital environment into account, this study singles out three key consumer demand characteristics: demand heterogeneity, uncertainty, and interactivity. Notably, we argue that interactivity is becoming a salient feature of consumer demand in the digital environment. According to Prahalad and Ramaswamy [61], demand interactivity indicates that consumers are no longer audiences; instead, they frequently participate in active and explicit dialogues with suppliers through various channels for better products and services. The development of the Internet, mobile Internet, and digital platforms offers consumers abundant opportunities to learn about businesses by communicating directly with suppliers or other value co-creators [17,25,58,62]. More importantly, consumers often initiate these interactive dialogues, no longer being controlled by the firm [61].

In the digital environment, new technology renders consumers a pivotal role in opportunity recognition and innovation [25,63]. Therefore, this paper examines two essential value-creation activities of startups: opportunity recognition and consumer innovation. Opportunity recognition has been the focus of entrepreneurship research for a long time [54]. According to the discovery view of opportunity recognition [64], this study defines opportunity recognition as a startup's endeavors in searching for and identifying new business opportunities [65,66]. Additionally, this study defines consumer innovation as consumers' involvement in the process of startups' innovation activities [67]. The activity of consumer innovation is highlighted here for two reasons. Firstly, innovation is at the core of entrepreneurship [53]. Secondly, in the digital environment, startups tend to empower their consumers more [60] by stimulating consumer innovation activities [25,30,41,58].

3.1. Consumer Demand and Opportunity Recognition

Demand heterogeneity benefits the opportunity recognition of startups in the digital environment. First, high demand heterogeneity gives birth to entrepreneurial opportunities waiting to be recognized by entrepreneurs [39]. As the market becomes increasingly

segmented, niche markets with high-profit potentials emerge, providing startups opportunities to create value for neglected consumers. This mechanism is called opportunity signaling [22]. Second, high demand heterogeneity provides more knowledge needed for opportunity discovery [68]. Startups serving consumers with different demands help them accumulate diversified knowledge about consumers, which can act as prior knowledge needed for opportunity recognition [69].

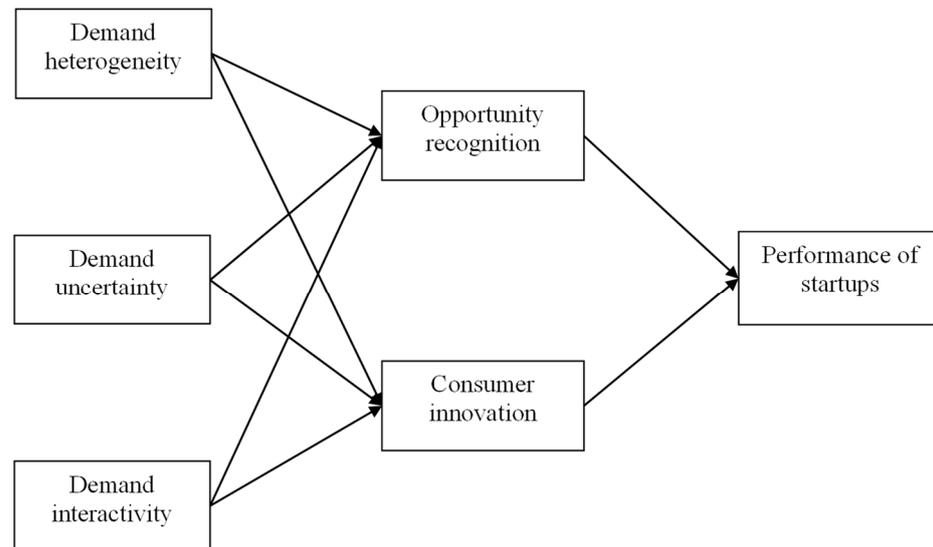


Figure 1. Conceptual Model.

In the digital environment, the infusion of new digital technologies enables firms to better meet consumers' diverse needs [18]. HSTYLE is a burgeoning Chinese clothing brand. Like Zara, HSTYLE designs and sells a staggering amount of fast-fashion clothes to young people. Nevertheless, unlike Zara, HSTYLE is a pure internet company in that all businesses are conducted online. HSTYLE's opportunity comes from meeting the increasingly individual and personalized needs of young Chinese people, particularly women.

Therefore, this study makes the following claim:

Hypothesis 1. *Demand heterogeneity is positively related to the opportunity recognition of startups in the digital environment.*

Uncertainty has long been highlighted as a critical source of entrepreneurial opportunities [70–72]. In recent years, the diffusion of new digital technologies such as cloud computing, social media, and data analytics have transformed the nature and ways of dealing with such uncertainty. In the digital environment, merely reacting to consumer needs is no longer the best way to use opportunities. Instead, startups must proactively drive changes by engaging in new digital innovations and delivering new products or services to consumers [73]. Kingdee is a well-known Chinese software company that offers software such as ERP products to small and medium-sized enterprises. In recent years, witnessing the rapid development of cloud computing technology, Kingdee is quickly transferring its traditional services to cloud services to grasp the opportunity of digital transformation.

Therefore, this study makes the following claim:

Hypothesis 2. *Demand uncertainty is positively related to the opportunity recognition of startups in the digital environment.*

Interactions with consumers can help startups to recognize entrepreneurial opportunities better. On the one hand, such interactions can generate knowledge that is beneficial for opportunity recognition [69,74]. On the other hand, interactions with consumers can assist startups in identifying opportunity signals more accurately [75]. A highly interactive

demand environment characterizes the digital economy, wherein consumers can interact with firms frequently and in a timely manner [4,28]. As a result, startups can easily obtain consumer feedback through virtual communities, Apps, and social networking services [17], and can better recognize opportunities by utilizing data analytics skills [76]. An example of this is Xiaomi, a Chinese internet firm founded in 2010 with the philosophy of “living for fans.” Xiaomi creates hardware, software, and internet services with the help of its loyal consumers, known as Mi Fans. To understand consumer needs, Xiaomi has established a virtual community called the millet community, where its fans are encouraged to actively participate in the discussion of their demands and the design of mobile phones.

Hence, this study makes the following claim:

Hypothesis 3. *Demand interactivity is positively related to the opportunity recognition of startups in the digital environment.*

3.2. Consumer Demand and Consumer Innovation

Existing literature shows that consumers are one of the key players of firm innovation in the digital environment [73,77]. In particular, demand heterogeneity drives startups to involve their consumers in their innovation processes. First, demand heterogeneity motivates startups to innovate more [78]. As there are many segments with different appeals in the market, the incumbent might neglect some particular niches with significant financial potential. Startups can recognize these niches by interacting with consumers and create value for these neglected niches by conducting consumer innovation activities [50]. Second, when demand heterogeneous is high, there is more innovation-supporting knowledge in the consumer market. Hence, it becomes an effective way to integrate consumers into innovation processes by enabling them to independently modify the products or services [78].

Therefore, this study makes the following claim:

Hypothesis 4. *Demand heterogeneity is positively related to consumer innovation of startups in the digital environment.*

In the digital environment, consumer innovation helps startups respond to and take advantage of demand uncertainty. First, consumer innovation has been viewed as an effective way to manage demand uncertainty [79]. When consumer preferences change dynamically, startups must constantly search for knowledge about consumer demands. Since such knowledge is sticky to consumers [80], involving consumers in their innovation processes becomes necessary. Second, consumers tend to actively participate in firm innovation because they want products or services that better match their changing preferences. Take Xiaomi, for example, to meet consumers’ changing preferences for smartphones, Xiaomi encourages its consumers to develop a Smartphone system based on its open-source system kit. Consumers are willing to participate in system development because their demands can be better satisfied in this way.

Therefore, this study makes the following claim:

Hypothesis 5. *Demand uncertainty is positively related to consumer innovation of startups in the digital environment.*

Consumer interactivity is beneficial to consumer innovation. First, the interaction with consumers is the beginning of consumer innovation. By interacting with consumers, startups can figure out the innovation-supporting knowledge sticky to consumers [80]. Second, the interaction between startups and consumers provides a channel for consumer innovation through which startups co-create products or services with their consumers [81]. In the digital environment, virtual communities, Apps, and social networking services are all communication and consumer innovation channels. For example, in the millet community, consumers of Xiaomi can frequently interact with Xiaomi’s development team on how to improve the Smartphone system, which ultimately leads to the success of Xiaomi.

Thus, this study makes the following claim:

Hypothesis 6. *Demand interactivity is positively related to consumer innovation of startups in the digital environment.*

3.3. Opportunity Recognition and the Performance of Startups

Prior research has extensively documented the positive relationship between opportunity recognition and firm performance [82,83]. Opportunity recognition motivated by consumer demands contributes to the performance of startups since it recognizes what value startups should create, which is closely related to consumers' willingness to pay [22]. In the last twenty years, many Chinese entrepreneurs have recognized and successfully seized entrepreneurial opportunities related to digital innovation and business digitization, producing a lot of successful digital companies such as Alibaba, Tencent, and Baidu.

Therefore, this study makes the following claim:

Hypothesis 7. *Opportunity recognition is positively related to the performance of startups in the digital environment.*

3.4. Consumer Innovation and the Performance of Startups

Consumer innovation contributes to the performance of startups. First, consumer innovation enables startups to co-create value with consumers [83–85], by offering products or services that better satisfy consumer needs. Second, consumers can gain more value by participating in the process of firm innovation [86]. As stated before, Xiaomi represents a classic example of consumer innovation. Thanks to its unremitting efforts in co-creating value with consumers, Xiaomi has quickly grown into a public company that values more than 40 billion in just a few years.

Therefore, this study makes the following claim:

Hypothesis 8. *Consumer innovation is positively related to the performance of startups in the digital environment.*

4. Methodology

4.1. Sample and Data

The hypotheses were tested based on a survey dataset of Chinese digital startups. The Chinese context was preferred for three reasons. First, China has become the world's largest digital market [87], making it a perfect context for digital entrepreneurship research. Second, China has been promoting digital entrepreneurship in recent years; MGI reported that one-third of the world's unicorn companies were established in China [88]. Third, with the rapid growth of the Chinese economy, consumer demands are changing dramatically and becoming increasingly heterogeneous, as Deloitte and Netease reported [89].

This study collected data from five provinces or municipalities in China (Beijing, Shandong, Anhui, Hunan, and Zhejiang) for two reasons. First, Beijing and Hangzhou (the capital of Zhejiang) are cities famous for digital innovation and entrepreneurship. Second, China's economic development is regionally unbalanced; Beijing and Shandong are in the Northern area of China, and Zhejiang, Hunan, and Anhui are in the Southern area, which ensures that our sample is regionally balanced.

This study designed the questionnaire in the following steps. First, all items were constructed based on a literature review and helpful reports on the digital economy. Second, we modified the wording and terminology through several interview rounds with entrepreneurs to ensure all items were accurate and easily understood. Finally, we organized a preliminary survey of some startup entrepreneurs for further feedback.

This study drew a random sample of 500 startups with the help of local governments. First, the governments of these five provinces provided us with a list of 34 incubators or startup parks, which are the largest and most well-known in the region. Then, we contacted these incubators and asked them to help us randomly select startups in the incubators or

startup parks according to the tail of their telephone number. Finally, we obtain a random sample of 500 startups.

The survey was conducted in 2017. Before the survey, we organized several meetings to train the investigators about how to conduct a questionnaire survey. We contacted all these startup companies to ask if they agreed to participate in the survey. Then we conducted an on-site survey by visiting them one by one. We chose an on-site survey because it can minimize potential misinterpretations of items and improve the response rate. To minimize common method bias, we took a double-respondent questionnaire design. We divided our scales into two questionnaires: A and B. In each firm, the research team asked two founders or co-founders to fill in the two questionnaires. Each interview was conducted following this procedure: (1) an interviewer contacted the interviewee to ask for permission; (2) the interviewer paid a visit to the interviewee and introduced the purpose of the research, and then guided the interviewee to fill in the questionnaire; (3) the interviewee double checked the questionnaire.

By the end of October 2017, we obtained 389 responses and deleted 67 of them following two criteria: (1) the total time spent on a questionnaire is less than 10 min, and (2) the percentage of responded items is less than 50%. The final sample is 323 with a response rate of 64.6% (323/500). The average age of the sampling firms is 3.82 and about 56.3% are founded less than three years. Of the startups we interviewed, 74.3% have less than 30 employees.

4.2. Measures

All items were measured using a 5-point scale ranging from 1 (“strongly disagree” or “strongly poor”) to 5 (“strongly agree” or “strongly well”) unless noted otherwise. The operationalization of variables, survey items, and measurement model results are reported in Appendix A.

Demand heterogeneity. Based on insights from previous studies [11,22,90,91], this study measured demand heterogeneity with four items that reflect the degree of diversity of consumer need: the extent to which consumers (1) desired personalized products or services; (2) had diverse needs; (3) were difficult to be satisfied with a standardized design; (4) had varying preferences for the final product or service.

Demand uncertainty. Based on insights from previous studies [92,93], this study measured demand uncertainty with three items that reflect the frequency of changes in demand and the degree of difficulty in predicting consumer demand: the extent to which consumers startup targets (1) change over time; (2) tend to look for new products or service all the time; (3) have different needs from new consumers.

Demand interactivity. According to previous studies [33,57], this study measured demand interactivity with three items that reflect the frequency, the characteristics, and the channel of interaction. This study asks the respondents to evaluate (1) the frequency with which their consumers interact with them; (2) the extent to which their consumers ask for instant interaction; (3) how many types of channels through which they interact with their consumers.

Opportunity recognition. According to previous studies [65,66,94,95], this study measured opportunity recognition with four items that reflect the ability of a startup to search and identify new business opportunities from various sources: the extent to which a startup recognized opportunities through (1) interacting with their consumers; (2) interacting with their investors; (3) interacting with their business partners; (4) daily communications with other stakeholders.

Consumer innovation. Based on measures used in prior studies [90,96,97], we measured consumer innovation with three items which reflect the degree of consumers participating in firm innovation: the extent to which consumers (1) offered frequent feedback and inputs on products or service; (2) proactively offered new ideas about a new product or service development; (3) actively involved in innovation activities.

Performance of startups. Since most startups in our sample are founded in less than 5 years, it is hard or unnecessary to collect information about their objective financial performance. Through interviews with many founders of startups, this study recognized that, in the early stage of a digital company, the ability to attract consumers is the most important performance index. Hence, we measured the performance of startups with three items: (1) consumer growth rate; (2) consumer conversion rate; (3) consumer retention rate.

Control variables. Four variables were controlled. At the industry level, this study controlled for *institutional dynamism* since changes in the institutional environment are important sources of entrepreneurial opportunities in transition economies such as China [98,99]. Institutional dynamism was measured by asking the respondents to evaluate the extent to which the policies affect their businesses in the past year using a 5-point scale, with “1” indicating “no change at all” and “5” indicating “change a lot”. At the firm level, this study controlled for *firm age* and *firm size* [100]. Firm age was measured by the number of years from founding to the present. Firm size was measured by the number of employees. At the individual level, the founder’s prior experience and knowledge are closely linked to entrepreneurship [69,101]. Founder’s education was controlled as an ordinal variable, with “1” indicating high school graduation degree, “2” indicating associate degree, “3” indicating bachelor degree, “4” indicating master’s degree, and “5” indicating doctorate.

5. Analysis and Results

This study analyzed our model following a two-step approach to structural equation modeling (SEM) [102]. This study used SEM for two reasons. On the one hand, SEM is an effective way to operate constructs that cannot be directly observed and can only be inferred from observable variables, such as consumer demand and innovation characteristics. On the other hand, SEM allows us to test complex relationship patterns, including many hypotheses. Due to these advantages, many studies on entrepreneurship and strategy apply SEM in their data analysis. For example, using SEM, Peng and Walid [103] investigate the effect of entrepreneurs’ perceived risks and barriers on sustainable entrepreneurship. Sánchez-García et al. [36] apply SEM to investigate the relationship between entrepreneurial orientation and companies’ innovation capacity. Etim and Daramola [104] apply SEM to investigate the relationship between the perception of technology by informal service providers and the readiness to use technology. Khan and Fatma [105] apply SEM to investigate the relationship among consumer perceptions of corporate social responsibility (CSR) programs and their effects on brand image, brand trust, and positive consumer word of mouth.

In the first step, this study conducted a confirmatory factor analysis (CFA) to assess the measurement model. First, the fit indices of the measurement model (Chi-square = 161.36, degrees of freedom = 109, $p < 0.001$; CFI = 0.98; RMSEA = 0.39) all meet the threshold of acceptability, which indicates that the model provides a good fit for our data. Second, this study assessed the reliability of our measures. Appendix A shows that all Cronbach α values and composite reliability (CR) values exceed the threshold of 0.70 [106], indicating high-scale reliability. Third, this study assessed the validity of our measures. As shown in Appendix A, the loadings of our items are well above 0.70, except for the third item for demand uncertainty, thus supporting convergent validity. This study assessed the discriminant validity by comparing the squared root of average variance extracted (AVE) with correlations between the construct and any other construct. The squared root of AVE for each construct exceeds the correlation between each pair of constructs, indicating high discriminant validity. Together, these results support the construct validity and reliability of our measures.

Table 1 shows the means, standard deviations, and correlations. This study conducted tests to compare measurement models for those pairs of constructs with correlations of 0.40 or higher [107]. As shown in Table 2, Models 1, 3, 5, 7, and 9 are one-factor models which treat the measurement of two constructs as one factor, and Models 2, 4, 6, 8, and 10 are

two-factor models where two constructs are treated as two factors. All two-factor models are superior to one-factor ones, showing discriminant validity.

Table 1. Descriptive Statistics and Correlation Matrix (N = 323).

	Mean	SD.	1	2	3	4	5	6	7	8	9	10
1. Demand heterogeneity	3.97	0.70	(0.744)									
2. Demand uncertainty	3.70	0.67	0.412 **	(0.707)								
3. Demand interactivity	3.86	0.81	0.306 **	0.422 **	(0.743)							
4. Opportunity recognition	4.07	0.65	0.168 **	0.264 **	0.291 **	(0.713)						
5. Consumer innovation	3.84	0.78	0.467 **	0.357 **	0.495 **	0.238 **	(0.748)					
6. Performance of startups	3.58	0.73	0.138 *	−0.010	0.215 **	0.163 **	0.159 **	(0.784)				
7. Firm growth	3.37	0.81	0.086	−0.010	0.101	0.163 **	0.056	0.513 **	(0.781)			
8. Firm size	37.42	103.46	0.072	0.040	0.088	0.056	0.085	0.242 **	0.246 **			
9. Firm age	2.77	0.79	0.057	0.040	0.067	0.064	0.094	−0.056	−0.127 *	0.204 **		
10. Founder education	3.05	0.80	−0.031	−0.020	−0.103	−0.006	−0.021	0.061	−0.087	−0.021	−0.017	
11. Institutional dynamism	3.46	0.95	0.025	0.010	0.031	0.139*	0.101	0.113 *	0.102	0.061	−0.007	−0.030

Note: The square root of average variance extracted in parentheses; ** $p < 0.01$; * $p < 0.05$ (two-tailed tests).

Table 2. Comparison of Measurement Models (N = 323).

Model	Model Description	χ^2	DF	$\Delta\chi^2$	RMSEA	NFI	CFI
Model 1	One-factor model: demand uncertainty and demand heterogeneity	201.511	14		0.204	0.740	0.749
Model 2	Two-factor model: demand uncertainty and demand heterogeneity	51.062	13	150.499 ***	0.095	0.934	0.949
Model 3	One-factor model: demand uncertainty and demand interactivity	215.845	9		0.267	0.632	0.634
Model 4	Two-factor model: demand uncertainty and demand interactivity	32.789	8	183.056 ***	0.098	0.944	0.956
Model 5	One-factor model: consumer innovation and demand heterogeneity	209.052	14		0.208	0.758	0.766
Model 6	Two-factor model: consumer innovation and demand heterogeneity	47.207	13	161.845 ***	0.090	0.945	0.959
Model 7	One-factor model: consumer innovation and demand interactivity	177.234	9		0.241	0.742	0.747
Model 8	Two-factor model: consumer innovation and demand interactivity	19.604	8	157.630 ***	0.067	0.971	0.983
Model 9	One-factor model: performance of startups and firm growth	199.511	9		0.256	0.764	0.768
Model 10	Two-factor model: performance of startups and firm growth	13.543	8	185.968 ***	0.046	0.984	0.993

Note: *** $p < 0.001$.

5.1. Hypotheses Test

This study tested hypotheses in the second step. The results are reported in Table 3. In Figure 2, the coefficients integrated in the nomogram of the model are shown. Results in Table 3 indicate that the model fit for our data is good (Chi-square = 483.388, degrees of freedom = 243, $p < 0.001$; RMSEA = 0.055, CFI = 0.901). As Table 3 shows, demand heterogeneity is positively related to opportunity recognition ($\beta = 0.106$, $p = 0.090$) and consumer innovation ($\beta = 0.422$, $p < 0.001$), lending supports Hypothesis 1 and Hypothesis 4. Results show that demand uncertainty is significantly and positively related to opportunity recognition ($\beta = 0.287$, $p = 0.010$) and consumer innovation ($\beta = 0.328$, $p = 0.004$), thus providing support for Hypothesis 2 and Hypothesis 5. Moreover, demand interactivity is positively related to opportunity recognition ($\beta = 0.235$, $p < 0.001$) and to consumer innovation ($\beta = 0.416$, $p < 0.001$), providing support for Hypothesis 3 and Hypothesis 6. Further, opportunity recognition is positively related to the performance of startups ($\beta = 0.138$, $p = 0.067$), which provides marginal support for Hypothesis 7. Finally, consumer innovation is positively related to the performance of startups ($\beta = 0.177$, $p < 0.05$), lending support for Hypothesis 8.

Table 3. Results of Structural Equation Modeling (N = 323).

	Relationship		Estimate	SE.	p
Opportunity recognition	<—	Demand heterogeneity	0.106	0.063	+
Consumer innovation	<—	Demand heterogeneity	0.422	0.076	***
Opportunity recognition	<—	Demand uncertainty	0.287	0.111	**
Consumer innovation	<—	Demand uncertainty	0.328	0.115	**
Opportunity recognition	<—	Demand interactivity	0.235	0.064	***
Consumer innovation	<—	Demand interactivity	0.416	0.073	***
Opportunity recognition	<—	Institution dynamism	0.079	0.037	*
Consumer innovation	<—	Institution dynamism	0.074	0.037	*
Performance of Startups	<—	Opportunity recognition	0.138	0.075	+
Performance of Startups	<—	Consumer innovation	0.177	0.073	*
Performance of Startups	<—	Firm size	0.002	0.000	***
Performance of Startups	<—	Firm age	−0.023	0.010	*
Performance of Startups	<—	Education	0.025	0.051	0.630

Note: Model fit: Chi-square = 483.388, degrees of freedom = 243 ($p < 0.001$), RMSEA = 0.055, CFI = 0.901; + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

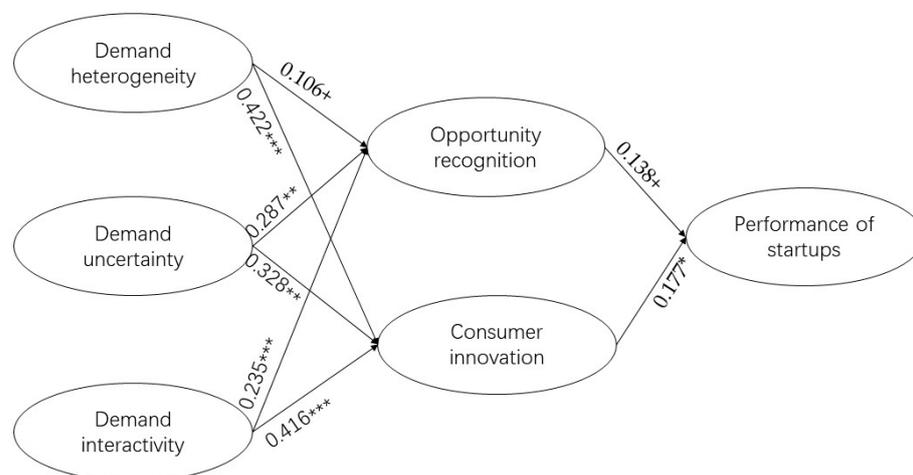


Figure 2. Coefficients. + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

5.2. Robustness Test

To test the robustness of our results, this study conducted an additional structural equation modeling by replacing the performance of startups with firm growth. Based on previous studies [108,109], this study measured firm growth by asking each respondent to evaluate firm growth on (1) the growth rate of sales; (2) the growth rate of employment; and (3) the growth rates of assets.

This study conducted analyses by following the same two-step approach [102]. As Table 4 shows, the model fit of the robust model is good (Chi-square = 475.186, degrees of freedom = 243, $p < 0.001$; RMSEA = 0.054, CFI = 0.905). Demand heterogeneity is positively related to opportunity recognition ($\beta = 0.108$, $p = 0.085$) and consumer innovation ($\beta = 0.421$, $p < 0.001$), providing further support for Hypothesis 1 and Hypothesis 4. Demand uncertainty is positively related to opportunity recognition ($\beta = 0.287$, $p = 0.010$) and consumer innovation ($\beta = 0.343$, $p = 0.003$), which supports Hypothesis 2 and Hypothesis 5. Hypothesis 3 and Hypothesis 6 are also supported as demand interactivity is positively related to both opportunity recognition ($\beta = 0.235$, $p < 0.001$) and consumer innovation ($\beta = 0.409$, $p < 0.001$). Furthermore, opportunity recognition is positively related to firm growth ($\beta = 0.169$, $p = 0.042$), further supporting Hypothesis 7. However, our results show that consumer innovation is not significantly related to firm growth ($\beta = 0.011$, $p = 0.890$). Overall, additional analyses provide support for our model.

Table 4. Results of Robustness Test (N = 323).

	Relationship		Estimate	SE.	<i>p</i>
Opportunity recognition	<—	Demand heterogeneity	0.108	0.063	+
Consumer innovation	<—	Demand heterogeneity	0.421	0.076	***
Opportunity recognition	<—	Demand uncertainty	0.287	0.111	**
Consumer innovation	<—	Demand uncertainty	0.343	0.117	**
Opportunity recognition	<—	Demand interactivity	0.235	0.064	***
Consumer innovation	<—	Demand interactivity	0.409	0.073	***
Opportunity recognition	<—	Institution dynamism	0.079	0.037	*
Consumer innovation	<—	Institution dynamism	0.072	0.037	*
Firm growth	<—	Opportunity recognition	0.169	0.083	*
Firm growth	<—	Consumer innovation	0.011	0.077	0.890
Firm growth	<—	Firm size	0.003	0.000	***
Firm growth	<—	Firm age	−0.044	0.011	***
Firm growth	<—	Education	−0.094	0.057	0.095

Note: Model fit: Chi-square = 475.186, degrees of freedom = 243 ($p < 0.001$), RMSEA = 0.054, CFI = 0.905; + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

6. Discussion and Conclusions

This study seeks to investigate how consumer demand drives startups' value-creation activities and subsequently enhances their performance in the digital era. Drawing on Priem et al.'s [22] demand-value creation-performance framework, this study identifies three critical characteristics of consumer demand in the digital era: demand heterogeneity, uncertainty, and interactivity. This study further finds that these characteristics are all positively associated with value-creation activities, such as opportunity recognition and consumer innovation. Moreover, value-creation activities driven by consumer demand have a positive correlation with startup performance.

6.1. Theoretical Contributions

This study makes three contributions to the existing literature. Firstly, the findings provide solid empirical evidence for Priem et al.'s [22] demand-value creation-performance framework in entrepreneurship. In conjunction with previous studies that emphasize the importance of consumers on innovation [48] and business model design diversification [49], this study provides a comprehensive understanding of how consumer demand, which acts as a critical motivation, affects entrepreneurs' managerial decisions. Additionally, compared to previous studies on entrepreneurship that focus on the supply-side [35,36] and drivers of innovation such as entrepreneur curiosity or entrepreneurial orientation, this study provides a novel and effective way of thinking from the demand side. Integrating these two perspectives contributes to the literature on the drivers of entrepreneurial activities such as innovation.

Secondly, the findings contribute to illustrating the boundaries of the DSP. According to Levitas' [52] comments on Priem et al.'s [22] framework, success in satisfying consumer demand does not necessarily equate to firm success. In line with this argument, the author found that the effect of consumer innovation, an essential value-creation activity triggered by consumer demands, appears to vary when measuring firm performance in different ways. Specifically, consumer innovation is positively related to the performance of startups in the eyes of consumers, but its impact on firm growth remains unclear. This result implies that the DSP cannot tell the entire story of the source of the firm's competitive advantage. This is likely why Priem et al. [22] call for viewing strategy from a broader and more balanced perspective by integrating the supply and demand side perspectives [39].

Thirdly, this study paves a new way for entrepreneurship research. Both opportunity recognition and innovation are at the core of entrepreneurship [44,45]. As such, the DSP is particularly valuable for entrepreneurship research [22]. Although prior research has long acknowledged the role of consumer demand in opportunity recognition [61–63], the connection between demand and opportunity recognition appears to be more of a taken-

for-granted black box. By introducing the DSP to entrepreneurship and confirming that demand uncertainty, demand heterogeneity, and demand interactivity contribute to value creation and consequently promote new venture growth, the author recommends the DSP as a new insightful perspective for entrepreneurship research [22].

Furthermore, this study extends the DSP by contextualizing it in the digital environment. Although the literature on the DSP is rapidly growing [22], most studies are conducted in traditional contexts, leaving the digital environment rarely explored [39]. The findings showed that, in the digital environment where consumer demands are highly heterogeneous, uncertain, and interactive [23,30], startups recognize opportunities better and are more likely to involve consumers in firm innovation. These findings confirm the importance of demand heterogeneity and uncertainty in value creation [20,21,44] and reveal the significant role of demand interactivity in value creation [25,34,48], thus enriching the DSP in the digital environment. In addition, both opportunity recognition and consumer innovation are positively related to the performance of startups in the digital environment. These findings provide evidence for why startups empower consumers more [51] and why consumer innovation is widely observed in the digital environment. Taken together, the findings extend the insight of DSP by demonstrating its strong predictive power in a new digital context [22,94].

6.2. Managerial Implications

This study can guide managerial practices. Firstly, the author suggests that founders of digital startups learn to recognize opportunities by closely monitoring consumer demand. In the digital environment, consumer sovereignty dictates the dominant logic of value creation. As such, opportunities stemming from demand heterogeneity, uncertainty, and interactivity become exceptionally valuable. Consequently, startups need to allocate substantial resources to uncover consumer needs. Secondly, consumer innovation becomes a particularly important way to innovate in the digital environment. Innovation in various forms has long been regarded as the most significant source of a firm's competitive advantage. In the digital world, the role of consumer innovation becomes even more prominent as it provides benefits that attract payments from willing consumers by involving them in the innovation process. Fortunately, for those startups that pay more attention to consumer demand, it becomes easier for them to design and implement consumer innovation activities.

6.3. Limitations and Future Directions

This study has several limitations that can guide future research. Firstly, although the author conducted a double-respondent questionnaire design survey and the reliability and validity of all scales were well ensured, the author still cannot rule out the threat of common method bias. Future research should responsibly utilize data from multiple sources (e.g., combining primary data with secondary data) to test the core tenet of the demand-side perspective. Secondly, the common problem of generalization exists in this study. As previously mentioned, as one of the world's leading digital economies, China represents an ideal context for testing our hypotheses. However, The present study highlights the market-led nature of China's digital economy, in comparison to other economies such as the technology-led United States or the manufacture-led Germany. Consequently, a key concern arises regarding the generalizability of the findings beyond the context of China. Therefore, there remains the question of whether our findings can be generalized to other economies. Future studies should strive to collect data from multiple economies to avoid this threat.

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Appendix A

Table A1. Items and Scales.

Scale Item, Validity and Reliability	Loading	References
<i>Demand heterogeneity</i> ($\alpha = 0.82$, C.R. = 0.83, AVE = 0.56)		
1. Consumers want us to provide personalized products/services	0.80	Priem, Li and Carr (2012) [22]; Adner and Zemsky (2006) [10]; Miceli, Ricotta, and Costabile (2007) [91]; Cui and Wu (2016) [90]
2. Consumer needs are very diverse	0.83	
3. Consumer demand cannot be fully satisfied with a standardized design	0.74	
4. Consumers express a widely varying set of preferences for the final product design	0.86	
<i>Demand uncertainty</i> ($\alpha = 0.70$, C.R. = 0.72, AVE = 0.48)		
1. Consumers' product/service preferences change quite a bit over time	0.87	Jaworski and Kohli (1993) [92]; Dess and Beard (1958) [93]
2. Consumers tend to look for new product/service all the time	0.86	
3. New consumers tend to have product-related/service-related needs that are different from those of our existing consumers	0.63	
<i>Demand interactivity</i> ($\alpha = 0.79$, C.R. = 0.79, AVE = 0.55)		
1. Consumers interact with us frequently	0.84	Weill and Woerner (2013) [33]; Andal-Ancion, Cartwright and Yip (2003) [57]
2. Consumers interact with us instantly	0.88	
3. Consumers communicate with us through various channels, including online communities, Social Networking Services, and Apps	0.81	
<i>Opportunity recognition</i> ($\alpha = 0.81$, C.R. = 0.80, AVE = 0.51)		
1. I often discover business opportunities through interacting with users	0.83	Ozgen and Baron (2007) [65]; Shane, Nicolaou, Cherkas and Spector (2010) [94]; Shepherd and DeTienne (2005) [95]; Ucbasaran, Westhead, and Wright (2009) [66]
2. I often discover business opportunities through interacting with investors	0.73	
3. I often discover business opportunities through interacting with business partners	0.85	
4. I often discover business opportunities through interacting with other stakeholders	0.78	
<i>Consumer innovation</i> ($\alpha = 0.79$, C.R. = 0.79, AVE = 0.56)		
1. Consumers proactively offer frequent feedbacks and inputs on product/service	0.82	Cui and Wu (2016) [90]; Algesheimer et al. (2010) [96]; Carbonell et al. (2009) [110]; Owen-Smith and Powell (2004) [97]
2. Consumers proactively offer new ideas about new product/service development	0.89	
3. Consumers actively participate in a variety of product design and product development activities	0.82	
<i>Performance of startups</i> ($\alpha = 0.82$, C.R. = 0.84, AVE = 0.57)		
1. Consumer growth rate	0.86	
2. Consumer conversion rate	0.90	
3. Consumer retention rate	0.80	
<i>Firm growth</i> ($\alpha = 0.83$, C.R. = 0.82, AVE = 0.61)		
1. Sales growth rate	0.86	Chandler et al. (2009) [109]; Brinckmann et al. (2011) [108]
2. Employee growth rate	0.83	
3. Assets growth rate	0.91	

References

- Mourtzis, D.; Panopoulos, N. Digital Transformation Process Towards Resilient Production Systems and Networks. In *Supply Network Dynamics and Control*; Springer: Cham, Switzerland, 2022; pp. 11–42.
- Wu, Y.; Nambisan, S.; Xiao, J.; Xie, K. Consumer resource integration and service innovation in social commerce: The role of social media influencers. *J. Acad. Mark. Sci.* **2022**, *50*, 429–459. [\[CrossRef\]](#)
- Aversa, P.; Haefliger, S.; Hueller, F.; Reza, D.G. Customer complementarity in the digital space: Exploring Amazon’s business model diversification. *Long Range Plan.* **2020**, *54*, 101985. [\[CrossRef\]](#)
- Sun, Z.; Li, Y.; Lou, X. The Impact of Customer Participation on Customer Value: Does Customer Resource and Regulatory Focus Matter? *Sustainability* **2022**, *14*, 16685. [\[CrossRef\]](#)
- Barney, J. Firm resources and sustained competitive advantage. *J. Manag.* **1991**, *17*, 99–120. [\[CrossRef\]](#)
- Eisenhardt, K.M.; Martin, J.A. Dynamic capabilities: What are they? *Strateg. Manag. J.* **2000**, *21*, 1105–1121. [\[CrossRef\]](#)
- Grant, R.M. Toward a knowledge-based theory of the firm. *Strateg. Manag. J.* **1996**, *17*, 109–122. [\[CrossRef\]](#)
- Kogut, B.; Zander, U. Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology. *Organ. Sci.* **1992**, *3*, 383–397. [\[CrossRef\]](#)
- Teece, D.J.; Pisano, G.; Shuen, A. Dynamic capabilities and strategic management. *Strateg. Manag. J.* **1997**, *18*, 509–533. [\[CrossRef\]](#)
- Adner, R.; Zemsky, P. A demand-based perspective on sustainable competitive advantage. *Strateg. Manag. J.* **2006**, *27*, 215–239. [\[CrossRef\]](#)
- Wang, T.; Aggarwal, V.A.; Wu, B. Capability interactions and adaptation to demand-side change. *Strateg. Manag. J.* **2020**, *41*, 1595–1627. [\[CrossRef\]](#)
- Manral, L.; Harrigan, K.R. The logic of demand-side diversification: Evidence from the US telecommunications sector, 1990–1996. *J. Bus. Res.* **2018**, *85*, 127–141. [\[CrossRef\]](#)
- Schmidt, J.; Makadok, R.; Keil, T. Customer-specific synergies and market convergence. *Strateg. Manag. J.* **2016**, *37*, 870–895. [\[CrossRef\]](#)
- Grappi, S.; Romani, S.; Bagozzi, R.P. Reshoring from a demand-side perspective: Consumer reshoring sentiment and its market effects. *J. World Bus.* **2018**, *53*, 194–208. [\[CrossRef\]](#)
- Siqueira, A.C.O.; Priem, R.L.; Parente, R.C. Demand-side perspectives in international business: Themes and future directions. *J. Int. Manag.* **2015**, *21*, 261–266. [\[CrossRef\]](#)
- Priem, R.L.; Swink, M. A Demand-side Perspective on Supply Chain Management. *J. Supply Chain Manag.* **2012**, *48*, 7–13. [\[CrossRef\]](#)
- Priem, R.L.; Wenzel, M.; Koch, J. Demand-side strategy and business models: Putting value creation for consumers center stage. *Long Range Plan.* **2018**, *51*, 22–31. [\[CrossRef\]](#)
- Rietveld, J. Creating and capturing value from freemium business models: A demand-side perspective. *Strateg. Entrep. J.* **2018**, *12*, 171–193. [\[CrossRef\]](#)
- Rietveld, J.; Eggers, J.P. Demand heterogeneity in platform markets: Implications for complementors. *Organ. Sci.* **2018**, *29*, 304–322. [\[CrossRef\]](#)
- Priem, R.L. A consumer perspective on value creation. *Acad. Manag. Rev.* **2007**, *32*, 219–235. [\[CrossRef\]](#)
- Priem, R.L.; Butler, J.E.; Li, S. Toward reimagining strategy research: Retrospection and prospection on the 2011 AMR decade award article. *Acad. Manag. Rev.* **2013**, *38*, 471–489. [\[CrossRef\]](#)
- Priem, R.L.; Li, S.; Carr, J.C. Insights and new directions from demand-side approaches to technology innovation, entrepreneurship, and strategic management research. *J. Manag.* **2012**, *38*, 346–374. [\[CrossRef\]](#)
- Nambisan, S. Digital Entrepreneurship: Toward a Digital Technology Perspective of Entrepreneurship. *Entrep. Theory Pract.* **2017**, *41*, 1029–1055. [\[CrossRef\]](#)
- Nambisan, S.; Wright, M.; Feldman, M. The digital transformation of innovation and entrepreneurship: Progress, challenges and key themes. *Res. Policy* **2019**, *48*, 103773. [\[CrossRef\]](#)
- Jiang, X.; Mastromartino, B.; Yang, Q.; Zhang, J.; Zhang, J.J. Influence of Consumer Interaction and Community Relationships on Value Co-Creation Willingness: A Mediation Model of Chinese Sports Brands. *Sustainability* **2023**, *15*, 115. [\[CrossRef\]](#)
- Tsui, A.S. From Homogenization to Pluralism: International Management Research in the Academy and Beyond. *Acad. Manag. J.* **2007**, *50*, 1353–1364. [\[CrossRef\]](#)
- Acar, O.A.; Puntoni, S. Customer Empowerment in the Digital Age. *J. Advert. Res.* **2016**, *56*, 4. [\[CrossRef\]](#)
- Kohli, R.; Melville, N.P. Digital innovation: A review and synthesis. *Inf. Syst. J.* **2018**, *29*, 200–223. [\[CrossRef\]](#)
- Labrecque, L.I.; von dem Esche, J.; Mathwick, C.; Novak, T.P.; Hofacker, C.F. Consumer power: Evolution in the digital age. *J. Interact. Mark.* **2013**, *27*, 257–269. [\[CrossRef\]](#)
- Chesbrough, H.W.; Appleyard, M.M. Open Innovation and Strategy. *Calif. Manag. Rev.* **2007**, *50*, 57–76. [\[CrossRef\]](#)
- Hautz, J.; Seidl, D.; Whittington, R. Open strategy: Dimensions, dilemmas, dynamics. *Long Range Plan.* **2017**, *50*, 298–309. [\[CrossRef\]](#)
- Murphy, P.K.; Greene, J.A.; Firetto, C.M.; Hendrick, B.D.; Li, M.; Montalbano, C.; Wei, L. Quality talk: Developing students’ discourse to promote high-level comprehension. *Am. Educ. Res. J.* **2018**, *55*, 1113–1160. [\[CrossRef\]](#)
- Weill, P.; Woerner, S.L. Optimizing your digital business model. *MIT Sloan Manag. Rev.* **2013**, *54*, 71. [\[CrossRef\]](#)

34. Hienerth, C.; Lettl, C.; Keinz, P. Synergies among Producer Firms, Lead Users, and User Communities: The Case of the LEGO Producer–User Ecosystem. *J. Prod. Innov. Manag.* **2014**, *31*, 848–866. [[CrossRef](#)]
35. Peljko, Ž.; Auer Antončič, J. Entrepreneurial Curiosity, Innovativeness of the Entrepreneur, and Company Growth. *Behav. Sci.* **2022**, *12*, 424. [[CrossRef](#)] [[PubMed](#)]
36. Sánchez-García, E.; Marco-Lajara, B.; Seva-Larrosa, P.; Martínez-Falcó, J. Driving Innovation by Managing Entrepreneurial Orientation, Cooperation and Learning for the Sustainability of Companies in the Energy Sector. *Sustainability* **2022**, *14*, 16978. [[CrossRef](#)]
37. Nickerson, J.A.; Silverman, B.S. Why Firms Want to Organize Efficiently and what Keeps Them from Doing So: Inappropriate Governance, Performance, and Adaptation in a Deregulated Industry. *Adm. Sci. Q.* **2003**, *48*, 433–465. [[CrossRef](#)]
38. Priem, R.L.; Butler, J.E. Is the resource-based “view” a useful perspective for strategic management research? *Acad. Manag. Rev.* **2001**, *26*, 22–40. [[CrossRef](#)]
39. Amit, R.; Han, X. Value creation through novel resource configurations in a digitally enabled world. *Strateg. Entrep. J.* **2017**, *11*, 228–242. [[CrossRef](#)]
40. Mawdsley, J.K.; Somaya, D. Demand-side strategy, relational advantage, and partner-driven corporate scope: The case for client-led diversification. *Strateg. Manag. J.* **2018**, *39*, 1834–1859. [[CrossRef](#)]
41. Ye, G.; Mukhopadhyay, S.K. Role of demand-side strategy in quality competition. *Int. J. Prod. Econ.* **2013**, *145*, 696–701. [[CrossRef](#)]
42. Porter, M.E. *Competitive Advantage: Creating and Sustaining Superior Performance*; FreePress: New York, NY, USA, 1985.
43. Lepak, D.P.; Smith, K.G.; Taylor, M.S. Introduction to Special Topic Forum: Value Creation and Value Capture: A Multilevel Perspective. *Acad. Manag. Rev.* **2007**, *32*, 180–194. [[CrossRef](#)]
44. Adner, R.; Csaszar, F.A.; Zemsky, P.B. Positioning on a multiattribute landscape. *Manag. Sci.* **2014**, *60*, 2794–2815. [[CrossRef](#)]
45. Wijekoon, A.; Salunke, S.; Athaide, G.A. Customer heterogeneity and innovation-based competitive strategy: A review, synthesis, and research agenda. *J. Prod. Innov. Manag.* **2021**, *38*, 315–333. [[CrossRef](#)]
46. Amabile, T.M. Creativity in context. In *Update to The Social Psychology of Creativity*; Westview Press: Boulder, CO, USA, 1996.
47. Henkel, J.; von Hippel, E. Welfare Implications of User Innovation. *J. Technol. Transf.* **2004**, *30*, 73–87. [[CrossRef](#)]
48. von Hippel, E.; Kaulartz, S. Next-generation consumer innovation search: Identifying early-stage need-solution pairs on the web. *Res. Policy* **2021**, *50*, 104056. [[CrossRef](#)]
49. Sohl, T.; Vroom, G.; McCann, B.T. Business model diversification and firm performance: A demand-side perspective. *Strateg. Entrep. J.* **2020**, *14*, 198–223. [[CrossRef](#)]
50. Zhang, X.; Xie, L.; Li, J.; Cheng, L. “Outside in”: Global demand heterogeneity and dynamic capabilities of multinational enterprises. *J. Int. Bus. Stud.* **2022**, *53*, 709–722. [[CrossRef](#)]
51. Levitas, E. Demand-side research’s role in macro-management: A commentary on Priem, Li, and Carr. *J. Manag.* **2013**, *39*, 1069–1084. [[CrossRef](#)]
52. Stevenson, H.H. *A Perspective on Entrepreneurship*; Harvard Business School: Cambridge, MA, USA, 1983; Volume 13.
53. Schumpeter, J.A.; Nichol, A.J. Robinson’s Economics of Imperfect Competition. *J. Political Econ.* **1934**, *42*, 249–259. [[CrossRef](#)]
54. Shane, S.; Venkataraman, S. The promise of entrepreneurship as a field of research. *Acad. Manag. Rev.* **2000**, *25*, 217–226. [[CrossRef](#)]
55. Miles, J.A. *Management and Organization Theory: A Jossey-Bass Reader*; John Wiley & Sons: Hoboken, NJ, USA, 2012; Volume 9.
56. Meyer, K.E. Context in Management Research in Emerging Economies. *Manag. Organ. Rev.* **2015**, *11*, 369–377. [[CrossRef](#)]
57. Andal-Ancion, A.; Cartwright, P.A.; Yip, G.S. The digital transformation of traditional business. *MIT Sloan Manag. Rev.* **2003**, *44*, 34–41.
58. Nambisan, S. Designing virtual customer environments for new product development: Toward a theory. *Acad. Manag. Rev.* **2002**, *27*, 392–413. [[CrossRef](#)]
59. Sawhney, M.; Verona, G.; Prandelli, E. Collaborating to create: The Internet as a platform for customer engagement in product innovation. *J. Interact. Mark.* **2005**, *19*, 4–17. [[CrossRef](#)]
60. Gazzola, P.; Colombo, G.; Pezzetti, R.; Nicolescu, L. Consumer Empowerment in the Digital Economy: Availing Sustainable Purchasing Decisions. *Sustainability* **2017**, *9*, 693. [[CrossRef](#)]
61. Prahalad, C.K.; Ramaswamy, V. Co-opting customer competence. *Harv. Bus. Rev.* **2000**, *78*, 79–90.
62. Li, W.; Qalati, S.A.; Khan, M.A.S.; Kwabena, G.Y.; Erusalkina, D.; Anwar, F. Value Co-creation and Growth of Social Enterprises in Developing Countries: Moderating Role of Environmental Dynamics. *Entrep. Res. J.* **2020**, *12*, 501–528. [[CrossRef](#)]
63. Nambisan, S.; Siegel, D.; Kenney, M. On open innovation, platforms, and entrepreneurship. *Strateg. Entrep. J.* **2018**, *12*, 354–368. [[CrossRef](#)]
64. Alvarez, S.A.; Barney, J.B. Discovery and creation: Alternative theories of entrepreneurial action. *Strateg. Entrep. J.* **2007**, *1*, 11–26. [[CrossRef](#)]
65. Ozgen, E.; Baron, R.A. Social sources of information in opportunity recognition: Effects of mentors, industry networks, and professional forums. *J. Bus. Ventur.* **2007**, *22*, 174–192. [[CrossRef](#)]
66. Ucbasaran, D.; Westhead, P.; Wright, M. The extent and nature of opportunity identification by experienced entrepreneurs. *J. Bus. Ventur.* **2009**, *24*, 99–115. [[CrossRef](#)]
67. Von Hippel, E. *Democratizing Innovation*; The MIT Press: Cambridge, MA, USA, 2006.
68. Xie, Z.; Li, J. Demand Heterogeneity, Learning Diversity and Innovation in an Emerging Economy. *J. Int. Manag.* **2015**, *21*, 277–292. [[CrossRef](#)]

69. Shane, S. Prior Knowledge and the Discovery of Entrepreneurial Opportunities. *Organ. Sci.* **2000**, *11*, 448–469. [CrossRef]
70. Kirzner, I.M. Entrepreneurial Discovery and the Competitive Market Process: An Austrian Approach. *J. Econ. Lit.* **1997**, *35*, 60–85.
71. McGrath, R.G.; MacMillan, I.C. *The Entrepreneurial Mindset: Strategies for Continuously Creating Opportunity in an Age of Uncertainty*; Harvard Business Press: Boston, MA, USA, 2000; Volume 284.
72. McMullen, J.S.; Shepherd, D.A. Entrepreneurial Action and the Role of Uncertainty in The Theory of The Entrepreneur. *Acad. Manag. Rev.* **2006**, *31*, 132–152. [CrossRef]
73. Abrell, T.; Pihlajamaa, M.; Kanto, L.; vom Brocke, J.; Uebernickel, F. The role of users and customers in digital innovation: Insights from B2B manufacturing firms. *Inf. Manag.* **2016**, *53*, 324–335. [CrossRef]
74. Laurisz, N.; Ćwiklicki, M.; Żabiński, M.; Canestrino, R.; Magliocca, P. The Stakeholders’ Involvement in Healthcare 4.0 Services Provision: The Perspective of Co-Creation. *Int. J. Environ. Res. Public Health* **2023**, *20*, 2416. [CrossRef]
75. Fischer, E.; Reuber, A.R. Contextual antecedents and consequences of relationships between young firms and distinct types of dominant exchange partners. *J. Bus. Ventur.* **2004**, *19*, 681–706. [CrossRef]
76. Sorescu, A. Data-Driven Business Model Innovation. *J. Prod. Innov. Manag.* **2017**, *34*, 691–696. [CrossRef]
77. Katsamakas, E.; Saharia, A. Digital Innovation to Transform the Customer Experience. *Int. J. Strateg. Inf. Technol. Appl.* **2019**, *10*, 38–52. [CrossRef]
78. Adner, R.; Levinthal, D. Demand heterogeneity and technology evolution: Implications for product and process innovation. *Manag. Sci.* **2001**, *47*, 611–628. [CrossRef]
79. Franklin, M.; Searle, N.; Stoyanova, D.; Townley, B. Innovation in the Application of Digital Tools for Managing Uncertainty: The Case of UK Independent Film. *Creat. Innov. Manag.* **2013**, *22*, 320–333. [CrossRef]
80. von Hippel, E. “Sticky Information” and the Locus of Problem Solving: Implications for Innovation. *Manag. Sci.* **1994**, *40*, 429–439. [CrossRef]
81. Liu, D.; Han, S.; Zhang, J. The golden mean: Research on the mechanism of customer participation in employee service innovation. *J. Retail. Consum. Serv.* **2022**, *68*, 103040. [CrossRef]
82. Gielnik, M.M.; Zacher, H.; Frese, M. Focus on opportunities as a mediator of the relationship between business owners’ age and venture growth. *J. Bus. Ventur.* **2012**, *27*, 127–142. [CrossRef]
83. Guo, H.; Tang, J.; Su, Z.; Katz, J.A. Opportunity recognition and SME performance: The mediating effect of business model innovation. *R&D Manag.* **2017**, *47*, 431–442. [CrossRef]
84. Hu, Y.; McLoughlin, D. Creating new market for industrial services in nascent fields. *J. Serv. Mark.* **2012**, *26*, 322–331. [CrossRef]
85. Liu, D.; Gong, C.; Zhang, S.; Ma, Y. The influence of firm’s feedbacks on user-generated content’s linguistic style matching—An explanation based on communication accommodation theory. *Front. Psychol.* **2022**, *13*, 949968. [CrossRef] [PubMed]
86. Nuttavuthisit, K. If you can’t beat them, let them join: The development of strategies to foster consumers’ co-creative practices. *Bus. Horiz.* **2010**, *53*, 315–324. [CrossRef]
87. Zeng, J.; Glaister, K.W. Value creation from big data: Looking inside the black box. *Strateg. Organ.* **2017**, *16*, 105–140. [CrossRef]
88. Wang, K.W.; Woetzel, J.; Seong, J.; Manyika, J.; Chui, M.; Wong, W. *Digital China: Powering the Economy to Global Competitiveness*; McKinsey Global Institute: Washington, DC, USA, 2017.
89. Deloitte; Netease. Content Consumption Upgrade Research Report. 2017. Available online: <http://www.199it.com/archives/634063.html> (accessed on 1 September 2019).
90. Cui, A.S.; Wu, F. Utilizing customer knowledge in innovation: Antecedents and impact of customer involvement on new product performance. *J. Acad. Mark. Sci.* **2016**, *44*, 516–538. [CrossRef]
91. Miceli, G.N.; Ricotta, F.; Costabile, M. Customizing customization: A conceptual framework for interactive personalization. *J. Interact. Mark.* **2007**, *21*, 6–25. [CrossRef]
92. Jaworski, B.J.; Kohli, A.K. Market orientation: Antecedents and consequences. *J. Mark.* **1993**, *57*, 53–70. [CrossRef]
93. Dess, G.G.; Beard, D.W. Dimensions of organizational task environments. *Adm. Sci. Q.* **1984**, *29*, 52–73. [CrossRef]
94. Shane, S.; Nicolaou, N.; Cherkas, L.; Spector, T.D. Do openness to experience and recognizing opportunities have the same genetic source? *Hum. Resour. Manag.* **2010**, *49*, 291–303. [CrossRef]
95. Shepherd, D.A.; DeTienne, D.R. Prior Knowledge, Potential Financial Reward, and Opportunity Identification. *Entrep. Theory Pract.* **2005**, *29*, 91–112. [CrossRef]
96. Algesheimer, R.; Borle, S.; Dholakia, U.M.; Singh, S.S. The impact of customer community participation on customer behaviors: An empirical investigation. *Mark. Sci.* **2010**, *29*, 756–769. [CrossRef]
97. Owen-Smith, J.; Powell, W.W. Knowledge networks as channels and conduits: The effects of spillovers in the boston biotechnology community. *Organ. Sci.* **2004**, *15*, 5–21. [CrossRef]
98. Tang, J. How entrepreneurs discover opportunities in China: An institutional view. *Asia Pac. J. Manag.* **2010**, *27*, 461–479. [CrossRef]
99. Webb, J.; Ireland, R.; Hitt, M.; Kistruck, G.; Tihanyi, L. Where is the opportunity without the customer? An integration of marketing activities, the entrepreneurship process, and institutional theory. *J. Acad. Mark. Sci.* **2010**, *39*, 537–554. [CrossRef]
100. Wennberg, K.; Delmar, F.; McKelvie, A. Variable risk preferences in new firm growth and survival. *J. Bus. Ventur.* **2016**, *31*, 408–427. [CrossRef]
101. Mary George, N.; Parida, V.; Lahti, T.; Wincent, J. A systematic literature review of entrepreneurial opportunity recognition: Insights on influencing factors. *Int. Entrep. Manag. J.* **2014**, *12*, 309–350. [CrossRef]

102. Anderson, J.C.; Gerbing, D.W. Structural equation modeling in practice: A review and recommended two-step approach. *Psychol. Bull.* **1988**, *103*, 411. [[CrossRef](#)]
103. Peng, H.; Walid, L.H. The Effects of Entrepreneurs' Perceived Risks and Perceived Barriers on Sustainable Entrepreneurship in Algeria's SMEs: The Mediating Role of Government Support. *Sustainability* **2022**, *14*, 11067. [[CrossRef](#)]
104. Etim, E.; Daramola, O. Investigating the E-Readiness of Informal Sector Operators to Utilize Web Technology Portal. *Sustainability* **2023**, *15*, 3449. [[CrossRef](#)]
105. Khan, I.; Fatma, M. CSR Influence on Brand Image and Consumer Word of Mouth: Mediating Role of Brand Trust. *Sustainability* **2023**, *15*, 3409. [[CrossRef](#)]
106. Nunnally, J.C. An overview of psychological measurement. In *Clinical Diagnosis of Mental Disorders: A Handbook*; Springer: Boston, MA, USA, 1978; pp. 97–146.
107. Tanriverdi, H.; Venkatraman, N. Knowledge relatedness and the performance of multibusiness firms. *Strateg. Manag. J.* **2005**, *26*, 97–119. [[CrossRef](#)]
108. Brinckmann, J.; Salomo, S.; Gemuenden, H.G. Financial Management Competence of Founding Teams and Growth of New Technology-Based Firms. *Entrep. Theory Pract.* **2011**, *35*, 217–243. [[CrossRef](#)]
109. Chandler, G.N.; McKelvie, A.; Davidsson, P. Asset specificity and behavioral uncertainty as moderators of the sales growth—Employment growth relationship in emerging ventures. *J. Bus. Ventur.* **2009**, *24*, 373–387. [[CrossRef](#)]
110. Carbonell, P.; Rodríguez-Escudero, A.I.; Pujari, D. Customer Involvement in New Service Development: An Examination of Antecedents and Outcomes. *J. Prod. Innov. Manag.* **2009**, *26*, 536–550. [[CrossRef](#)]

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